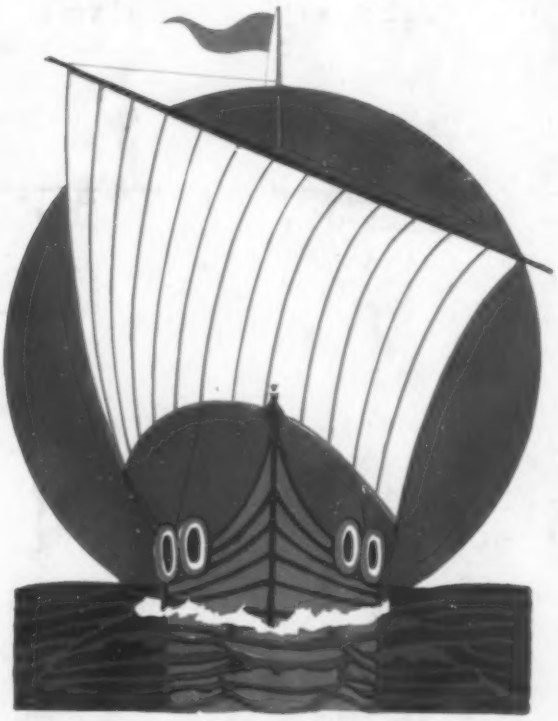
Yachting

APRIL, 1919



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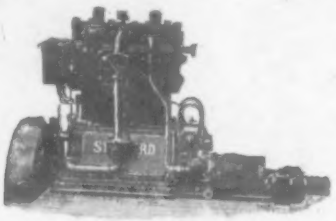

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Contents of Yachting

FOR APRIL, 1919

WILLIAM ATKIN, Editor

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IT seems not amiss to call particular attention to pages 134 and 135 for in pictorial form

these show a phase of yachting that should be fostered by all men who love boats and the water

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What Is Going to Happen in Yachting Circles This Year?

MR. JENNINGS of H. H. Jennings Company, yacht brokers, 1 Broadway, N. Y., says that "we believe there is going to be considerable interest taken in yachting this year judging from the number of yachts passing hands, also from the fact, that so many of the men being discharged from the Navy are going into the yachting game, thereby augmenting the present great number of yachtsmen."

WHILE discussing the outlook for the coming yachting season Mr. T. C. Landi, of Cox & Stevens, said, "There is considerable interest shown, although from what I can see the demand is generally for moderate and comparatively small sizes of yachts; there are, however, some inquiries for vessels of off-shore type."

HOLLIS BURGESS YACHT Agency, 15 Exchange St., Boston, through Mr. Walter Burgess says: "I am pleased to say that I look forward to a very successful yachting season. Everywhere people interested in the sport seem to be waking up. There is a great demand for all kinds of yachts, especially larger for sailing craft than for some years. Quite a number of racing men are talking of building, and used boats that have a record and any chance to win are eagerly sought. There is extensive activity in Classes P and R, and also in Class I, the old 18-Foot Class. This last, however, is confined to local waters. Cruising craft, both sail and power, are also in demand, especially as the large clubs plan giving cruises the coming season."

THE New York Yacht Launch and Engine Company, Morris Heights, N. Y., says of the coming yachting season, "There seems to be a large demand for small boats. Owing to the fact that a good many of the homes of the yachtsmen are located on the water front, and until conditions are settled we feel that it will be better to build a small boat than to go into the large cruiser class and for this purpose we have designed two types of craft well suited for this service."

FROM the point of view of Harry W. Sanford, yacht broker, 501 Fifth Avenue, N. Y. "Yachting is again coming into its own. Judging from the number of inquiries we are receiving it can be stated the outlook for the year 1919 looks most promising.

There is an active demand for yachts—practically of all types—which in itself shows the general interest being taken in yachting by boat owners and others who are about to take up "The Cleanest of Sports."

In a number of instances we have received orders for the construction of new yachts—a type of smaller boat which is becoming very popular is the Express runabout,—its fascination, the thrill one gets in "hugging" the water at fast speed is such as to have created a demand for a boat of this type, both by the owners of large yachts who want their speedster and others who use them for a delightful afternoon's spin or visiting their friends along the water-front.

The healthful clean life in the open—the happy associations and spirit of fairness and comradeship which simply permeate through the atmosphere of yachting is taking hold upon the Public and feeling the pulse of demand I can readily say the sport is coming back—stronger than ever."

THE G. W. Ford Yacht Agency, 30 East 42nd Street, "looks forward to one of the best yachting years ever experienced. Small craft, from 30 to 60 feet, of every type are in great demand. There is also a healthy demand for large yachts. "Most of those boats, though, are still in government service and many of them in European waters and so unavailable."

MR. J. MONTGOMERY STRONG of Strong and Bickman, 29 Broadway, N. Y., remarks of the yachting season this year, "that from conversations with various yacht owners, the majority of the owners of the larger vessels, will not put their boats in commission, for various reasons, principally on account of the high cost of labor and material, and especially the high wages demanded by crews; all of which they feel is prohibitory.

The tendency is towards putting only the smaller yachts in commission, those requiring only from one to three men in the crew.

There is a fairly active demand for these vessels and especially motor craft of 30 to 45 ft. water line; there is a scattering demand for some larger vessels, for special off shore purposes.

There is prospects, however, of some good racing among the smaller craft, although the yacht clubs have not, as yet, settled on any definite plans."

SIMON FISCH, 31 E. 27th Street, N. Y., for many years with Stanley M. Seaman, foresees "great activity in the 1919 yachting season despite the great shortage of pleasure boats of all kinds."

A REPRESENTATIVE of this magazine called upon one of the officials of the Gas Engine & Power Company, and Charles L. Seabury & Company, Consolidated, Morris Heights, N. Y., a well known boat-building firm, and obtained, perhaps, one of the best opinions on the much discussed question "What is going to happen in yachting circles this year?" that has been offered to us of late.

"Never before," the official said, "has the outlook for yachting and the use of pleasure boats

(Continued on page 150)

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YACHTING

VOLUME XXV
NUMBER IV

APRIL, 1919

25 Cents a Copy
$2.50 a Year

In the Track of Northeast Coasters

By CARL MOREY

IT was eleven-thirty when the old wheezy 14 H. P. (?) Boothbay began to spark, grunt, kick, smell and make the cabin of the Auxiliary Sloop *Voyageur* generally untenantable. Five minutes more and the aforesaid Boothbay was nursed along to fairly smooth running condition, that is, missing on either one or the other of the two cylinders not more than half the time. Captain Mack had taken the deck work in hand while I was elected to jack the refractory Boothbay into line. We had taken on about fifteen gallons of "gas," thirty-odd gallons of fresh water and enough "grub" for a couple of days as we expected to tie up once or twice during the trip. Everything in readiness, Captain Mack cast off the breast line and hopped aboard. Backing out into the stream, we turned her nose down river.

The *Voyageur* is a trunk cabin auxiliary keel sloop equipped with galley, toilet, lavatory, two transom berths, numerous lockers, drawers and shelves in the cabin. She has a 9″ pole mast 40 ft. high from deck, a 39 ft. boom, 29 ft. gaff, hoists 30 ft. and carries a forestaysail and jib. Her standing rigging is $\frac{5}{8}$″ plough steel wire rope, and running rigging is 2″ girth hemp.

As we are now acquainted with the *Voyageur* and are more or less familiar with her layout, we will continue on our trip started at about noon, Monday, June 23, 191–, from Ellsworth, Maine, for Boston, Mass.

The day was one of those typical down-east June days, with a bright sun and a reasonably good breeze. During the four miles of running under power, down the crooked little Union River, we cleared the decks, made all sail and prepared for the first leg of our journey. At the mouth of the river where it widens into Blue Hill Bay, we got our first breath of good sailing breeze and immediately shut off power and careened to the lively frolic of a fair wind. At two o'clock we passed Newbury Neck and were skirting the shore of Bartlett's Island when my fourteen-year old sister, who was the remaining member of the crew,—cook, supercargo, and general nuisance,—decided that all hands needed coffee, etc., so she forthwith ordered the alcohol stove to be lighted and she proceeded to make coffee,—as we thought. The rattling of a can and a small-sized shriek brought me from the aft end of the cockpit to the companion-hatch to satisfy an outburst of curiosity. There on the floor of the cabin was the coffee-pot, and there on the bunk was my sister. A sudden lurch of the vessel (?) had caused the catastrophe. It was soon remedied, and we ate, drank, and smoked, all but my sister who said she didn't like the smell of tobacco smoke, a remark which I had never heard her utter before.

By this time we were rounding Ship and Barges' Ledge, breeze still fair, the sun still high, and we were making for the channel between Black Island and the north shore of Swan's Island.

Of all the Atlantic coast, in my opinion,—and I have yachted on considerable of it,—there is none to compare with the coast of Maine from the Muscle Ridge Channel to Machias. The bold granite shores of yellows, reds, browns and black, the clear, cold, deep waters, the innumerable snug harbors, and the fishing villages are all set off by the evergreens characteristic of the state.

On passing Egg Rock we got our first taste of the broad, smooth swell of the Atlantic Ocean. Captain Mack chewed more tobacco, I smoked more tobacco, and my sister—stayed more in the cabin. At about six o'clock we passed Long Ledge to starboard, Eastern Mark Island to port, Bald Island to port, and Sheep Island to starboard. At this juncture, the wind which had been diminishing gradually, died down flat, and I was appointed a committee of one to tonic up the old Boothbay and urge it into propelling us up Deer Island Thoroughfare to Stonington Landing where we tied up alongside of a S.O.C.O.N.Y. tanker for the night.

In my opinion, an appetite is the largest thing on a small boat trip, so amid the smell of gasoline and oil, we fried out some bacon, dug out the cake, cookies, and crackers, and boiled the coffee-pot, and naturally ate, that is, all the crew with the exception of the supercargo whose appetite and general comfort diminished as the voyage progressed. After supper, we locked up the craft and all went ashore, Captain Mack visiting acquaintances, while the supercargo and I made a few general purchases of food, both for ourselves and the engine (whose appetite seemed to be abnormal).

We returned to the boat after an hour's stroll about Stonington and my sister turned in, in hopes of sleeping off that peculiar uncomfortable feeling and state of mind. Two hours or so before my customary time for retiring, I went over the side of the tanker and up the ladder to the dock, strolled around some more, but finding it more or less uninteresting at that time of the evening in those quaint little seacoast towns, I returned to the tanker and scraped up with her skipper a general conversation which lasted until Captain Mack returned.

Tuesday morning at 5 a. m. Captain Mack was astir on deck overhauling rigging and shaking out the sails.

"Good morning, Mack," I called as I stepped out into the chill air, for the nights along the Maine coast are sharp even in the hottest season of the year. "Thanks to the courtesy of the Socony we won't have to heave up anchor this morning."

"Righto," said the Captain. "What did you get to eat last night?"

We proceeded to scrape together a breakfast, and with another dose of tonic to Boothbay we slipped away from the Socony and chugged in the direction of Vinal Haven, the day beginning bright and sunny and flat calm. We entered Fox Island Thoroughfare, which is a narrow reach between Vinal Haven Island and North Haven Island, passed North Haven Village and Browning's Head Light still under power.

When we were a mile or so off Dogfish Ledge the old Boothbay began to bark and then went dead. After spending fifteen minutes cranking,

priming, testing ignition, etc., I took up the deck plate of the gastank and inserted a yardstick. The yardstick came out as dry as a chip. I swore; Captain Mack swore; the supercargo—came on deck for the first time and we all sat quiet except for the choppy swell of Penobscot Bay. The gaff and boom slatted and creaked, the sun was hot, for it was eleven o'clock, the boat didn't have steerage way. It was an absolute flat calm. We whistled for a wind we threw pennies overboard, we poked the yardstick into the gastank again and swore again. Finally we set about getting something to eat.

At two o'clock wind came. It was out of the southwest which was reasonable for the boat and we pointed her nose in the direction of Fisherman's Island Passage which marks the eastern entrance to the Muscle Ridge Channel. As the afternoon wore on, the breeze freshened, and in the late afternoon we were slipping along at a lively pace, close hauled, with everything out that would draw air and our lee rail awash. Captain Mack and I smoked, chewed and talked while the crew and supercargo remained below.

As we entered Muscle Ridge Channel, we overhauled a small fisherman, sloop-rigged and with power. When we pulled alongside, they started their engine and pulled ahead of us. At the western end of the Channel we had to beat through and lost considerable time in doing so. Meanwhile the fisherman was leaving us pretty well in the rear. With power she could outpoint us slightly and for that particular course it was a marked advantage. After passing Whitman Island Light we steered a course for Monhegan Island, our intentions being to make Port Clyde in two long reaches rather than to beat up the coast. By this time our fisherman friend had left us some three or four miles back and during the next hour we lost sight of him altogether as we left the coast.

We made Port Clyde at about eight o'clock that evening just as the wind died out, and dropped anchor in three or four fathoms of water. After supper we found it necessary to replenish our fresh water and gastanks. The first was obtained from a well on shore right near the beach, but at that time of night we omitted the gas intending to take care of that in the morning. Captain Mack and I went ashore, mailed some letters and cards home, and finding little or nothing else to do ashore, returned to our vessel.

Wednesday morning was a glorious day for sailing. We had a fresh northwest breeze and decided not to waste a minute of it, so got under way soon after sunrise and pointed for Portland. As we rounded one of the small ledges at the harbor entrance, we overhauled the little sloop fisherman. She had run into Port Clyde for the night and was heading for Boston the same as we were. We spoke her and jollied one another as to the relative sailing qualities of the two boats. The fisherman was heavily laden and we had very little trouble with the fresh sailing breeze to drop her out of sight before noon.

The day's run was more or less uneventful until about three o'clock in the afternoon when the wind died almost to a flat calm, leaving us about seven miles off Portland Head. What little air there was was slatted out of the sails by the rolling and pitching of the vessel for we had no steerage way and could not keep her head to the long swells of the Atlantic. Then we swore because we had neglected to get gas at Port Clyde and incidentally learned not to take chances on a late June breeze. While we were rolling in the oily swell, listening to the creaking of the gaff and the slatting of the sails, a collier left Portland and we watched her as she passed the lightship and pointed southwest. Again we swore. Supper helped to kill about an hour of idleness and then some more smoking and talking. At eight o'clock the Ransom B. Fuller passed us; people on board waved at us and, I guessed at the time, laughed at us.

Ten o'clock brought a breeze from the northeast and we got under way without losing a capful of it. A little after ten we passed Cape Elizabeth and set our course for the Isle of Shoals. I took the first watch which was to last until 2 a. m. while Captain Mack took to the bunk. Along about midnight it began to rain, and rather than waken Captain Mack, getting oilskins, I remained at the wheel until he came on deck. It was raining hard now so he put on his boots, oilskins and plenty of sweaters under them. I went below, put on dry clothing and turned in.

I was called on deck to take my trick at the wheel at six o'clock. We were off the Isle of Shoals. Rain! I never saw or felt the beat of it and Blow! Captain Mack didn't take a reef or touch a line except the main sheet which he eased off slightly as we adjusted our course. I donned oilskins and took the wheel while the Captain went below for a snooze.

I ate a wet breakfast that morning. As the day advanced, the wind increased, and by nine o'clock we were bowling along at ten knots with both lights on the lee side of the trunk under water. By eleven o'clock we rounded Thatcher's Island; the rain had let up, and the sun was breaking through. The Captain came on deck and we ate again, that is, all but the supercargo who wasn't eating any more.

The run along the North Shore was glorious. The wind was on our quarter and the sun was hot and drying. We dropped anchor at Marblehead at 2:30, and I immediately hustled my sister ashore and we boarded a train for Boston. Captain Mack stayed with the boat and brought her into Boston the next day.

The *Voyageur* is being refitted for another cruise, but the next one will not be limited to four days' time nor fifteen gallons of gas!

GROG

A PLAGUE of those musty old lubbers,
Who teach us to fast and to think,
And, patient, fall in with life's rubbers,
With nothing but water to drink!
A can of good stuff, had they twigged it,
Would have set them for pleasure agog;
And spite of the rules of the schools, the old fools
Would have all of them swigged it,
And swore there was nothing like grog.

CHARLES DIBDIN.

ON Stoney Lake, near Peterborough, Canada, the week-enders always see a fleet of 14-foot **Peterborough** dinghies under sail.

CHEMONG LAKE, Canada, has a fleet of 14 foot **Peterborough** sailing dinghies that afford the finest kind of sport.

C A N O E S

AS a means of transportation and of travel the canoe, a craft created by the American Indian and developed by the white man, holds a leading place in North America. As a vehicle of sport it appeals to hundreds of thousands of outdoor folks. Its usefulness has been proved by the explorer, the trapper, the surveyor and the voyager.

Canoes of every description have been built, each type to fill a particular niche in the fields of both outdoor sport and commerce. A peculiarity of all canoes is that they are as easily paddled as sailed, and in addition take the kick of a motor driven propeller as though their abo-

original designers had created the model especially for motor propulsion.

Those men who are looking for a real small boat are well advised to look into the possibilities of canoeing. As depicted here, there is variety in the sport and great pleasure.

THE 16-foot open **Peterborough** canoe is easily propelled by paddling, and is also a fast craft when under sail.

CONTRARY to general belief even among men who live on the water some canoes have carrying capacity. Here is a 22 foot **Peterborough** freight canoe that easily carries 3 tons!

THE HULL OF AN ALPHA CLASS BOAT

MODEL YACHTING

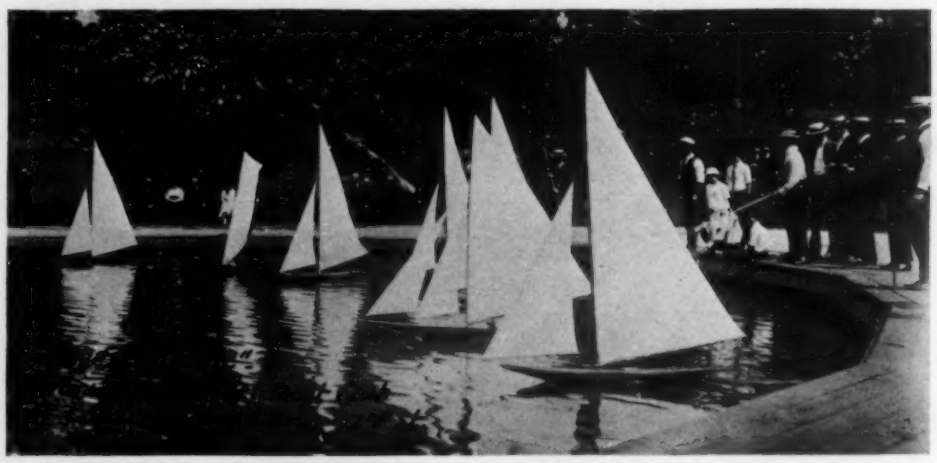
An Interesting Sport

WILLIAM RICHARDS

IN touching upon model yachting which has taken large strides toward the front as instructional sport in the last few years these pictures give a comprehensive idea of the development achieved by the Central Park Model Yacht Club members who have designed several of the models shown here for the 1919 racing season.

These boats are all 60 inches over all or thereabouts; being designed for the 36″ waterline class.

A feature of this club is its naval architectural class meetings each Tuesday evening the year around which are attended by practically every member, and at which the practical is dug out of the theory of naval architecture and applied to the racing model. Both classes are instructed by the club's Commodore, John O. Berg.



OVER the line —Central Park Model Yacht Club at Conservatory Lake, 72nd Street, Fifth Avenue, New York.

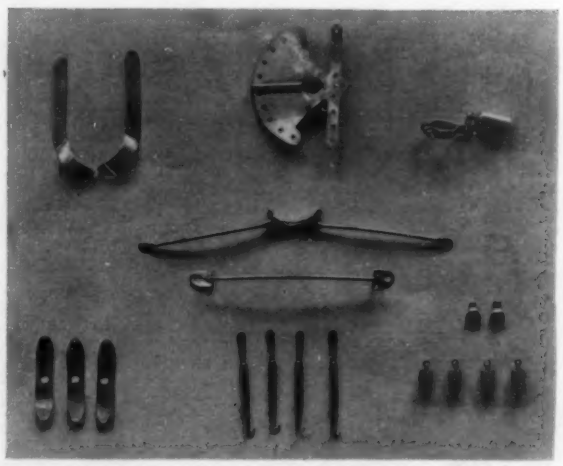
THE first Sunday in May will open the Central Park Model Yacht Club racing season. On that day the Club's Third class sailing yachts will compete having the option of from 9 to 11 A. M. or 11 A. M. to 1 P. M. on Conservatory Lake in Central Park at 72nd Street on the Fifth Avenue side, and the Power Boat Division will use the period not used by the sailing models.

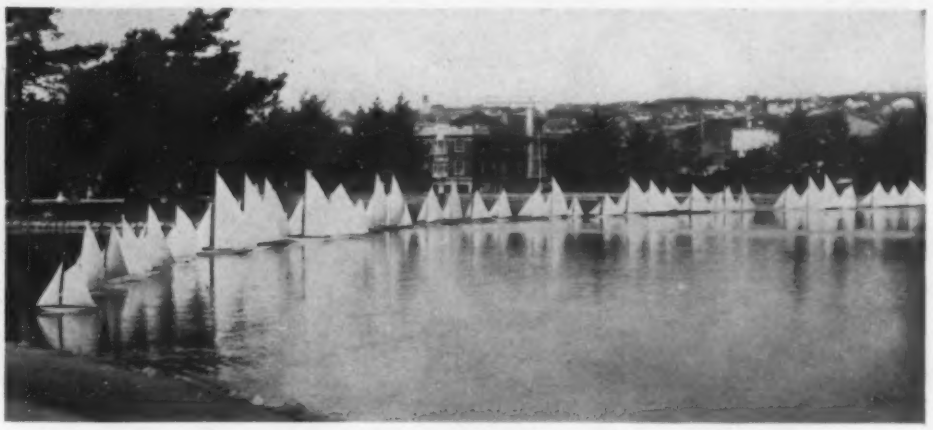
On the second Sunday in May the races of the Third class sailing yachts will take place on the large lake, or row-boat lake, during the period 9 A. M. to 11 A. M. The Power Boat Division holding their races on Conservatory Lake at the same time, while the period from 11 A. M. to 1 P. M. the same day will be used by the 36″ L. W. L. sailing models on the small or Conservatory Lake.

This series of races will follow on alternating Sundays to and including the last Sunday in November when the official racing season for the club's cups will terminate.

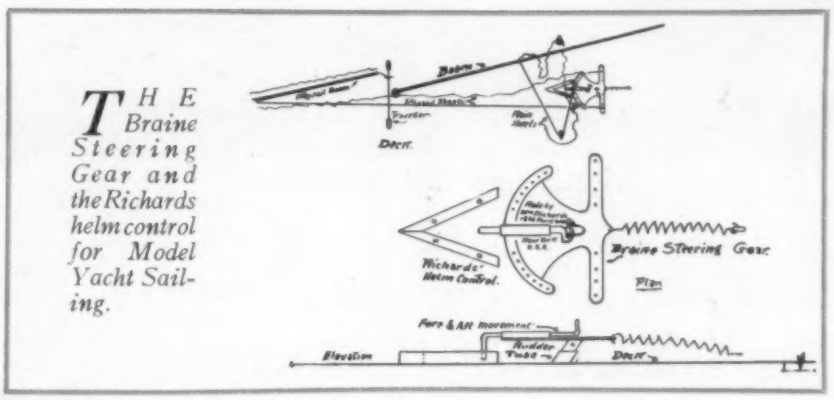
FITTINGS for sailing models up to and including models 36 in. over all length.

The Richards helm adjustment which slides in the tube shown as part of the Braine steering quadrant is not shown.





OUT on the Pacific coast model yachtsmen also play the game for all it is worth, and judging from the size of the fleet here lined up, about forty boats all belonging to members of the San Francisco Model Yacht Club, interest in these miniature craft is wider than most sailing men realize.



THE Braine Steering Gear and the Richards helm control for Model Yacht Sailing.

IN the Braine type steering gear we have one of the best methods of semi-automatic control for the handling of the modern model sailing yacht inasmuch as the quadrant operating the tiller is indexed with a series of holes in its periphery which allow of the main sheet being placed in a proper position very quickly, when taking advantage of the wind to make a certain "leg" or to reach a designated turning point.

This advantage consists principally of being able to balance the model against the wind blowing, through indirect action of the main-sheet and further to correct the course or assist the model in holding the planned course through a supporting action of the staysail sheet which runs to the cross arms of the gear.

A glance at the drawing will show the method of reeving the sheets to the Braine gear the setting of the spring and the use of the Richards helm control which as its name implies, limits or extends the liberties of the steering quadrant.

THE Central Park Model Yacht Club's activities for 1919, given out at their last meeting consist of a racing programme which teems with interest; and as this year's fleet is large, the Sundays between the first of May and the last of November are about full-up with model yacht activity.

A Runabout Which Is Different

A FORTY-EIGHT FOOT SEDAN RUNABOUT

A NEW and entirely distinctive type of boat has been produced by the Great Lakes Boat Building Corporation, a forty-eight foot sedan. It is now building at Milwaukee for Mr. C. C. Pape, of St. Louis and New York. The sedan is powered with a pair of eight-cylinder Van Blerck engines, and will develop a turn of speed of forty miles an hour, a new record for an out and out pleasure boat of this general type.

The interesting feature of this type of runabout or sedan is that the main cockpit is placed forward, ahead of the noise of the engines, and permits of complete enclosure with an automobile type limousine top. The automobile top, which will be made by the W. S. Seaman Company, one of the foremost body manufacturers, will be in accordance with the latest and best practice of the motor car industry.

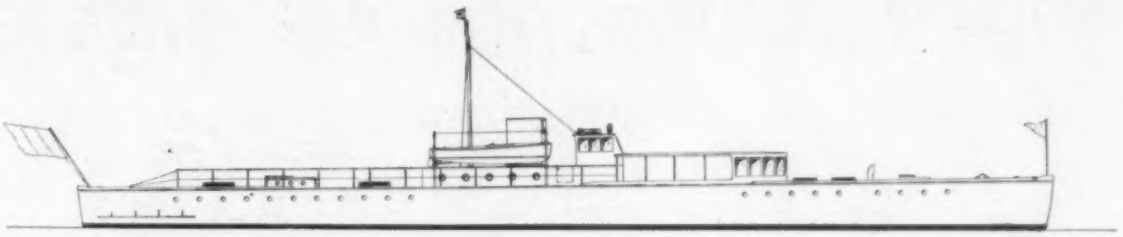
The result obtained in the new design is that the sedan can be operated at an extremely high speed with absolute comfort to the owner and guests aboard. The forward cockpit has a seating capacity for four on the big upholstered seat which runs athwartships, and for six in wicker chairs which are provided as part of the equipment. An after cockpit is provided for the engineer.

The arrangement with the trunk cabin over the power plant permits of full head room in the engine compartment. This plan solves the great difficulty which has been experienced heretofore of providing accessibility to the engines while under way. The controls for the two Van Blercks are carried to the forward cockpit so that the owner may have the pleasure of driving his boat at the high speeds which will be obtained.

Aside from the forward or main cockpit, engine room and engineer's cockpit aft, a toilet is provided forward under the main deck to which access is had through a door in the forward cockpit.

The finish and equipment contemplated is most elaborate. The limousine top will be upholstered in imported gray broadcloth and the box spring seats will be done in genuine leather. The interiors will be of mahogany throughout, as will the decks. The underbody will be painted white and the sides Prussian blue.

The new Great Lakes Sedan is quite a logical development and represents another step forward in the marine industry. This type of boat, with extremely high speeds, and yet permitting of complete enclosure, will be used extensively for commuting between Summer homes and the city.



A SUPER-YACHT OF UNUSUAL SPEED

A FEW weeks ago a reader of YACHTING inquired as to the possibility of building an express yacht of extreme speed, (50 miles an hour) coupled with economy of maintenance and operation, yet small enough to be easily handled and withal having complete cruising accommodations.

The problems of creating such a craft seemed unanswerable, and indeed without an unusually compact and efficient power plant the combination of fifty miles an hour on the water and cruising comfort are unanswerable.

Comfort, as YACHTING's inquiring reader interprets it is living room equal to that in a conveniently arranged apartment ashore with, in addition, a deck sufficiently spacious to stroll upon, and the equivalent to an outdoor living room, and of course all the fixtures and furnishings that combined create a yacht.

Given the power plant the creation of a 50-mile-an-hour yacht is simple engineering.

Gasoline motors have not been built of sufficient power to drive a large boat over 35 miles an hour. Heavy oil engines are not built for speed. Steam then must be the power. Steam plants though as generally designed are far too heavy and too bulky for installation in our reader's idea of a high speed yacht.

Fortunately, there is one manufacturer who builds a light compact flexible, and powerful marine steam plant—The Talbot Engineering Corporation—and it is a workable outfit that has been used successfully in all manner of craft from naval craft to tug boats.

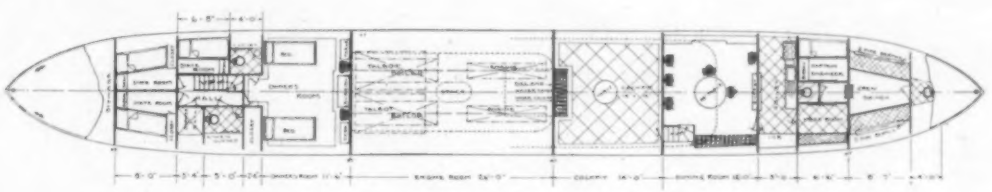
With two 2000 h. p. units installed and driving twin screws which with auxiliaries, fuel-oil tanks, water tanks, etc., requiring but 26 feet of the yacht's length the power is at hand.

A carefully designed hull of wave collecting type but sharp at both ends 125 feet long and 16 feet wide arranged as shown in the plan below is subdivided into five watertight compartments. The owner's quarters are aft and comprise three single, and one double staterooms, two baths and a separate shower room. The after deck is 45 feet long, and flush, but there is a small house over the boilers and engines; a pilot house raises above this and is fitted with engine controls as well as with navigation equipment.

A fourteen-foot-square sunken deck, or cockpit provided with built in lounge, wicker table, and arm chairs, makes a first class outdoor room. A semi-circular windshield, and standing top assures protection from wind and rain.

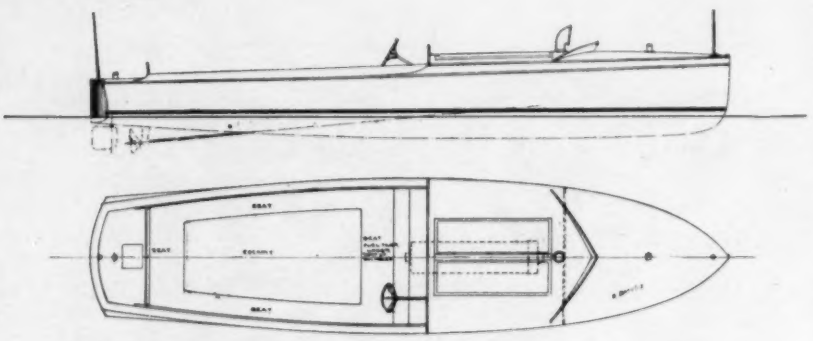
The dining saloon is 12 feet by 14 feet square—a fair sized room, and has adjoining forward a large galley fitted with every modern appliance including a Shipmate range.

Room is provided forward for a crew of six men and two officers. This comprises separate cabin for captain and engineer, with adjoining bath, mess room, and pipe berths for crew.



HIGH speed and comfortable living quarters are both possible in combination as shown in the cabin plan herewith. Note the small space, less than one-quarter of the yacht's length, required of the compact 4000 h. p. Talbot steam plant.

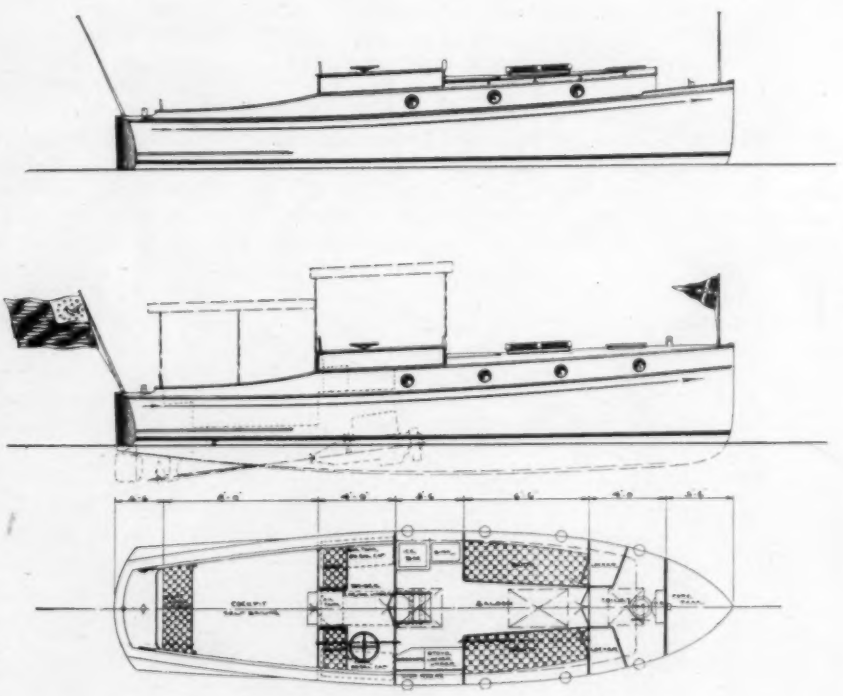
Two Splendid Craft for the Peaceful Days Ahead



HERE and there and everywhere is the haunt of the runabout and one like this is good for service in rough water as well as in smooth. As developed by the New York Yacht Launch and Engine Co., this particular craft is able as well as fast.

THESE two motor yachts were designed especially by the New York Yacht, Launch and Engine Company for the yachtsman who lives on the water front and needs a small boat of general all around use in place of a large yacht until such time as labor and material conditions are settled, and the building and maintenance of a large craft drop to normal again.

This year promises well for the small boat and with the coming of warm spring days there will be delight in the eye and heart of every man who goes afloat for recreation. YACHTING feels, though, that unless orders are placed early for new boats and arrangements made immediately for the purchase of second-hand craft many men will find themselves boatless before June drifts in.



FOR two people to cruise around the Long Island Sound, without any worries of crew, the 32-ft. boat shown herewith should suit any one. The drawing shows two profiles, one with a raised deck, and one with a hunting cabin. The feature of this boat is that the steering and controlling of engine are all done from the cockpit which is directly over the engine.

Six Sheets Number One Sandpaper, Please

GERALD TAYLOR WHITE

THERE is an old fellow running a ship chandlery in a water front street that I could name, who never has to look at the calendar to see what the season is. To him, the first signs of spring are not the robin and the violet, the budding trees and the pussywillows, but instead, he knows that the gladsome season is approaching by the number of pale young men who step into the store with the request that has been made the title of this story. In fact old Pop's seasons are all marked off for him in somewhat the following manner.

EARLY SPRING

Well dressed pale young men with requests for sandpaper. Gentle voiced.

LATE SPRING

Shabbily dressed young men smoking cigarettes and requesting spark plugs and batteries. Rather gruff voice.

EARLY SUMMER

Begrimed young men, smoking pipes and requesting books on "How to Run the Blank Motor." Much water front profanity.

LATE SUMMER

Tanned young men, chewing tobacco, dressed in bathing shirt, khaki pants, once white shoes and a once blue cap who in a voice like the Bull of Bashan, demand, "Shoot us some o' that blankety blanked ile o' yers and be blankety blank quick about it or I'll take a belaying pin to yer top hamper.

EARLY FALL

Besweatered young men, rolling gait, slicing Navy plug into a corn cob pipe buying extra blankets and wondering how long 'twill be 'fore ice sets in.

LATE FALL

Very sad young men with husky voice after canvas for winter cover.

WINTER

Overcoated young men who come in and sit before the fire and lie and lie and lie.

Of course you, Mr. Reader, don't swear, nor do you lie about the wonderful record your boat made last summer. You cheerfully acknowledge that your boat cannot make over seven miles an hour, and you are sure that you burn more than a pint per horse power hour. Yes you are—NOT. A boat man who does not lie to defend his boat from attacks is not worthy of having a boat. A boatman who would acknowledge that his boat was the slowest in the fleet would acknowledge that his grandmother was a monkey. He would be an outcast among his fellows, and the very fact that he told the truth would make them all suspicious of his verity.

But to get back to the sandpaper part of the tale. In fitting out a boat for the season one should go about the work with a predetermined idea of exactly what there is to be done, and how it is to be done. The first thing to do is to uncover the boat entirely. Take off every bit of covering and let the Spring sun light up your work. Remove from the hull everything that is portable. Take out all floor boards, locker traps, batteries, rope, chain, dishes, etc. until every part of the boat is opened up as far as possible to light and air. Now with a bucket of warm water and washing soda and a very stiff bristle brush scrub out the bilges as far as you can reach. Dirt in the bilges of a boat not only rots the planking and frames but it causes that bilgy smell we hear so much about. While the interior is drying out, turn your attention to the outside of the hull and scrub that clean. Not pretty clean, but absobally-lutely clean. If you have neglected to scrape the barnacles off when you laid her up you deserve the fate that is in store for you. You will find that each and every barnacle will have to be attended to in person. A live wet barnacle will stick quite persistently, but a dead dry barnacle has a hold on the wood that is wonderful to witness but beastly hard to discourage. If from your last season's experience you have reason to think that there is a leak somewhere, you should fill the boat up with water as high as you can without injuring the motor or other parts that cannot easily be removed. Wherever possible the motor should be removed to a shop where the overhauling can be done during such times as you cannot work on the hull. Experienced motor boatmen usually take the motor out in the Fall and remove it either to their home or to some shed or shop where they can work on it during the cold months. Before filling a boat with water you should be sure that she is blocked up very firmly as the weight of the water will place considerable strain on blocking and shores. Inspection from the outside will show any leak of consequence. At first, particularly if the boat has been stored under a dry roof, there will be more or less leakage from planks that have not yet had a chance to swell up. If you leave the water in for a day, and still find a leak, you may be sure that attention should be paid to it. The chances are that all that is needed is a little fresh caulking cotton. Never put new cotton in on top of old. If you will take the tang of a fine file and heat it red hot and let it cool slowly after bending it into a hook about 3/8" long you will find that the temper has been removed so that you can file the hook to a knife edge. This hook can be used to rout out the old cotton. If you have never done a job of caulking you had better go slow, as it is one of the most difficult jobs connected with boat building. No doubt it looks very easy, but it is also very easy to caulk a little too hard and break out the plank on the inside. If you do not caulk hard enough the cotton will fall out, or at any rate not stop the leak. If the, seam is open for any distance it would be wise for you to get hold of some one who is more expert in the art. After caulking, the cotton should be covered with some thin paint, and then the seam can be puttied. You will undoubtedly find other seams that need puttying, and some that should be planed off to give a smooth even surface to the outside of the boat. Not only is a smooth outside an asset in the way of looks, but it takes many extra gallons of gasoline to drive a rough uneven boat through the water.

If the outside is now in good shape, only needing painting to be done; you can turn your attention to the outboard mechanical parts of the craft. Inspect the rudder and hangings, the stuffing box or stern bearing and any metal parts that are outboard. Even if the packing in the box seems in good shape, it is a good thing to repack it with fresh soft packing. Many owners make the

mistake of winding the packing around the shaft spirally a couple of times. This is wrong, as the packing will hold much better if pieces are cut from it just long enough to make a ring around the shaft. Put on two or three of these rings, being careful to space the joints so that they are not on the same line. Points that cause a lot of trouble in many boats, are the bolts that hold the stuffing box or stern bearing to the stern post. These have a habit of working in the wood so that their hold is broken. In this case it is either necessary to get new and longer lag screws, or else turn the box partially around so that the lags will get into a new place where there is plenty of solid wood. A rubber gasket should be placed between the box and the stern post, although a piece of flannel or canvas well soaked with white lead will do quite as well.

By this time the interior of the boat should be well dried out and aired. You will find that in spite of the scrubbing, there is a great deal of fine sediment lying on top of the keel, and in the corners. This should be removed with a putty knife until the bilge is just as clean as the decks or cabin floor. If the boat was properly built you will find a couple of small holes in the heel of the frames at the keel, called limbers; which allow the bilge water to run back and forth to the bilge pump. These holes have a faculty of stopping up, and causing the bilge water to form a lake between frames which will not be touched by the pump. With a piece of bent wire you can clean out all of these holes and remove the dirt. If the paint under the flooring has chipped off, you should scrape all the loose paint away and repaint the entire bilge. Particularly is this the case with a motor boat, for the oil from the motor will ruin any bare wood in the bilges. After the bilges are clean and painted, you can lay down the floor boards. If these have needed painting it should have been done outside before the boards were brought aboard. As a rule you will have several pieces of board that fit the openings too tight, and these ought to be planed down now. Remember that boards that fit fairly tight now will be much too tight later when the boat is afloat. If the boat has been outside where the dampness will get at her all the time this will not be quite as true as with a boat that has been kept in a dry place.

If the interior of the cabin needs painting or varnishing it can be done now. Always scrub off all woodwork before varnishing and be sure that it is perfectly dry before you put any varnish on. If the wood is in such bad shape that scraping is necessary, you should buy one or two cabinet scrapers. As a rule these scrapers come unsharpened. One or more of the edges should be ground to a chisel edge and then sharpened on an oil stone. The edge should be thinner than one that would be on any other cutting tool, and then the edge should be turned over at right angles to the scraper with the tang of a file. The tang should be ground down so that it is smooth and even, as otherwise the rough edges will take all the edges off the scraper. A properly sharpened scraper will take off a thin shaving at each stroke, and in no other way can a good scraping job can be done. Professionals have to sharpen their scrapers every ten or fifteen minutes, so don't think that one sharpening will do the whole job. During this scraping the floor should be covered with old paper so that shavings will not get down into the clean bilge. After scraping, the wood must be well smoothed down with No. 1 sandpaper and then finished off with No. 0 paper. Brush off all the dust, but don't touch water to the surface, and then varnish. Two coats should be enough to make a good job, although three are sometimes necessary. We often see interiors where brass fittings such as door knobs, window catches, etc., have been covered with varnish. I agree with you that this practice saves polishing, but wearing a high collar also saves washing your neck.

With the interior all finished you can turn your attention to the outside of the boat. No matter how well the hull looks on the outside it will be necessary to sandpaper it before giving it a new coat. If you have contemplated changing the color of the outside, you had better reconsider it, unless the color you have in mind is very like the color that is on the boat. It is almost impossible to put black paint on over white, or vice versa. Even if you get enough coats on to cover, you will find that the first time you bump a dock, or your mooring buoy chafes, that your new color has come off and an ugly patch of her last year's raiment shows through. This is also the case where you attempt to put varnish over a surface that has once been painted. Even if you burn and scrape all of the old paint off you will find that enough remains in the pores of the wood to show through the varnish.

Be sure that your paint and varnish is absolutely bone dry before you put on another coat. It should be dry all the way through, and just because it does not feel sticky to the hand is no reason for feeling that it is perfectly dry. Twenty-four hours is not more than enough to allow the varnish to set properly. If you find that your brass work has become badly corroded and that polishing paste will not clean it, you can get the green off the brass by immersing the pieces in a saturated solution of oxalic acid. A really better and quicker way is to buff the pieces upon a buffing wheel.

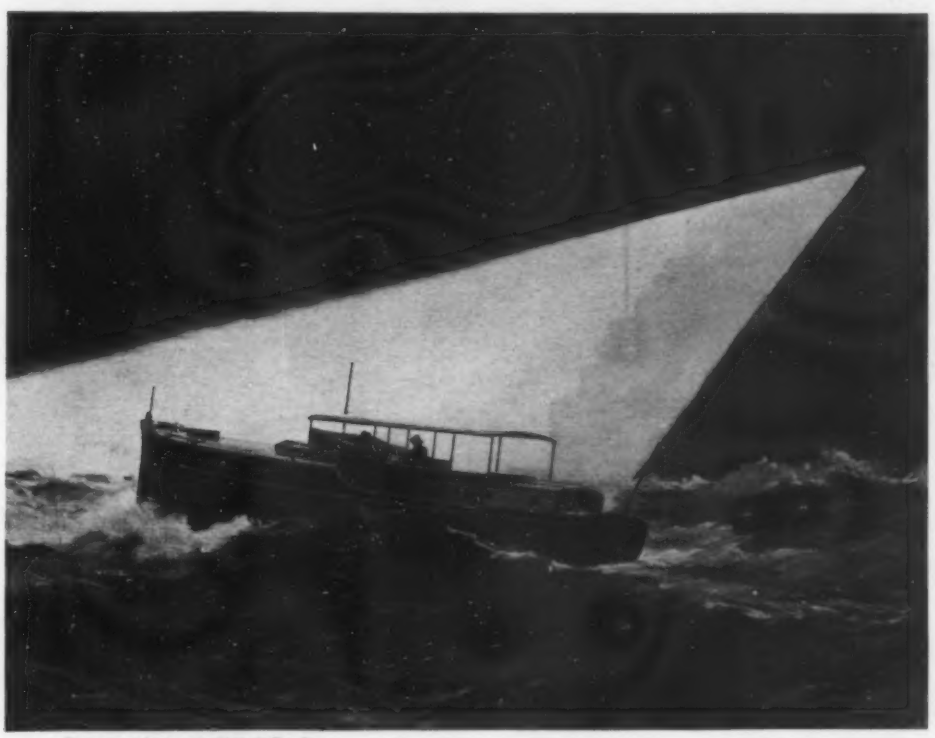
Now get after the engine. I am taking it for granted that you have it outside of the boat, for if you have not, you must do any overhauling before you have painted the inside, for otherwise you will smear grease all over your clean woodwork. To do a proper job the engine should be taken apart entirely. The insides of the cylinders should be inspected carefully to see if there are any scores in the walls, and the piston rings lifted and the carbon cleaned out from under and around them. All of the bearings should be looked after, and the oil ducts cleaned out with a bit of wire. As a rule new cylinder head and base gaskets will have to be fitted. On most machines the gaskets can be of heavy brown paper thickly smeared with shellac on both sides. To cut the paper to the proper shape, lay the sheet on top of the cylinder or base and tap the paper gently with a ball pene hammer directly over the sharp edge of the iron. The edge will cut through leaving the paper ring exactly the proper shape. Clean off all old oil and grease and then put the parts back. If the machine is a heavy one, it will be necessary to assemble it partly in the boat unless you are lucky enough to have access to a derrick or hoist of some kind. To protect the boat from scratches while returning the engine to its place you should cover the flooring, seats, etc., with old canvas, or even paper. You may wonder why I suggest putting the motor back after the boat is all painted on the inside. The reason for this is that the bilge, engine bed and adjoining parts should have their share of the paint. Usually that portion of the boat that is under or behind the motor gets no paint or attention from one year to another. If you will thoroughly paint that portion of the boat that is in the way of the engine, and then put the motor in, you can finish up the rest of the painting afterwards.

The next point for inspection is the rigging and deck gear. If there are masts and spars they will very likely need scraping and varnishing, at any rate they will need sandpapering and varnish. Canvas will have to be mended or renewed. Ropes stretched out taut in the sun for a good drying

(Continued on page 161)

Sea Wolf IV, a Forty-Footer

Designed for Comfort with Speed



From a painting by Frank Paulus

A STURDY cruiser suitable for cruising anywhere and of traveling at a seventeen mile clip.

THIS *Sea Wolf* is the fourth craft for Mr. Le Roy Moody, treasurer of Lancia Motor Car Company, New York, and designed by Kromholz, New York City.

Its general characteristics are those of the modern express cruiser, with powerful full bodied lines, assuring ableness and maximum speed under adverse conditions of weather. The design shows a raised deck forward, midship cockpit and trunk cabin aft. Forward quarters consist of toilet, cabin with the usual locker space and galley. The motor and tanks are installed under hatches in the midship deck and a state room has been incorporated under the after trunk.

The dimensions of *Sea Wolf IV* are as follows: 40 ft. by 9 ft. 4 in. wide and 3 ft. draft. She is powered with a six cylinder 6 in. by 6 in. Frisbie motor which develops 75 h. p. at 800 revolutions and which will propel the craft between sixteen and seventeen miles an hour.

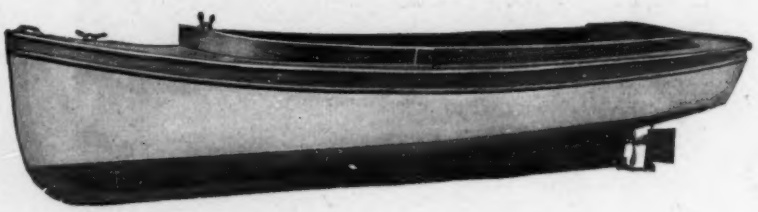
AND THE POSTMAN BRINGS LIKE LETTERS EVERY DAY

I HAVE read with interest Mr. S. S. Rabl's article in the February number of YACHTING on types of easy to build yachts.

*Will you please advise where drawings or plans of a boat on the style of the skimming dish or lark can be procured for a 14 ft. or 16 ft. model? * * **

Built in the Old New England Way

BEING some notes on a type of boat which is seldom featured in boating magazines but for all that a type that deserves kindly mention.



A WHOLESOME type boat that is suitable for use anywhere and everywhere.

WHEN the Editor first went to sea, if one may call sailing down Long Island Sound going to sea, he voyaged in an 18-foot open launch which was built in Connecticut and powered with a Connecticut built motor—a Mianus of 3 h. p.

The craft in which this cruise was undertaken was similar to the stock launches now being built by Wm. J. Moxley & Son, Cos Cob, Conn. The Moxley boats, though, are better craft so far as design and motor are concerned than the 18 footer the Editor sailed in; they are faster for the same horse-power and better sea boats, too.

It may not be amiss to say that these Moxley launches are built in the good old New England way. In other words, they are built to last. Several years experience on the part of their builders has eliminated all guess work as to the boat's performances and their constructional details.

These open launches come in three stock sizes, particulars of each following:

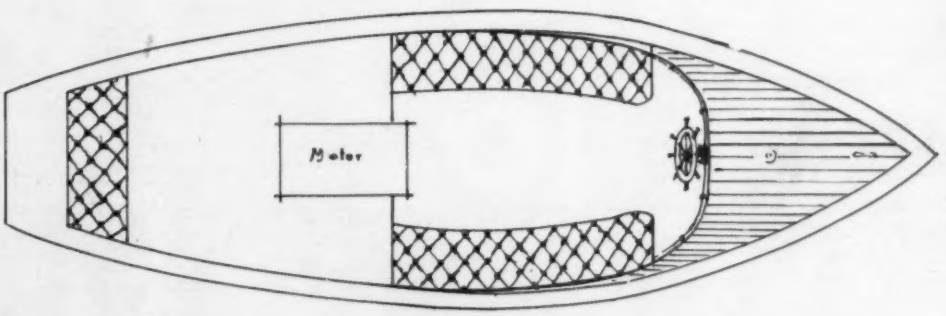
Sixteen foot launch, 4′–8″ wide, 2′–8″ depth of hold, 1′–4″ draft, cockpit length 10′-6″, least freeboard 1′-1″, 2½ h. p. motor with reverse gear, speed 7½ miles an hour.

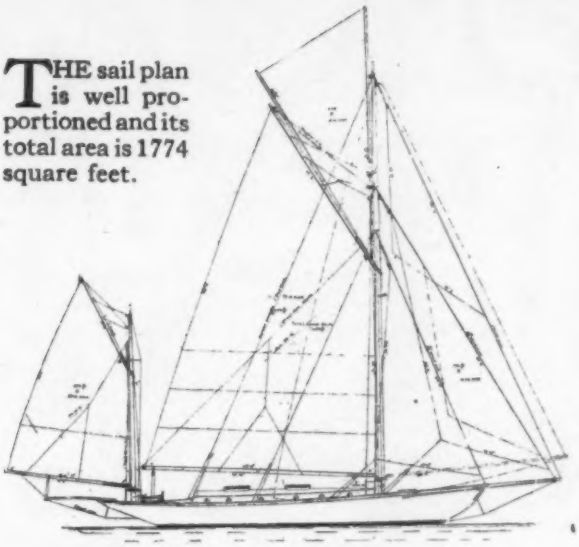
Twenty-foot launch, 5′-8″ wide, 3′-8″ depth of hold, length of cockpit 13′, draft 1′-8″, least freeboard 1′-8″, double cylinder 5 h. p. motor with reverse gear, 7½ miles an hour.

Twenty-five foot launch, 6′-4″ wide, 4′-0″ depth of hold, length of cockpit 17′-6″, draft 2′-0″, least freeboard 1′-8″, double cylinder 8 to 10 h. p. motor with reverse gear, speed 7½ miles an hour.

These craft all have Connecticut white oak keel and frames with cedar planking and copper fastenings, while the decks, coamings and interior joiner work are finished with mahogany.

FOR small craft no arrangement equals side seats and one across the stern.





THE sail plan is well proportioned and its total area is 1774 square feet.

A 50 Foot Auxiliary Yawl

AN English cruising yacht of wholesome type, and of rugged build.

A USEFUL type of auxiliary yawl is shown herewith, which will appeal strongly to the man who enjoys real sailing.

The design is from the board of W. G. McBryde, of Glasgow, and shows a good wholesome cruiser, which will have a fair turn of speed while at the same time possessing excellent accommodation below decks.

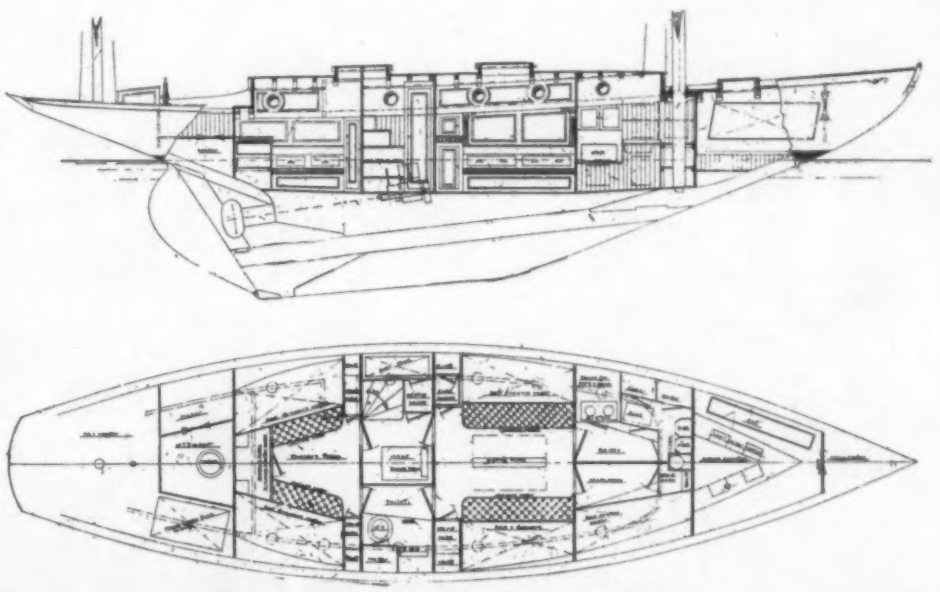
The general dimensions are as follow:—Length, 50 ft. overall; 35 ft. 6 ins. on waterline; beam, 13 ft.; draught, 7 ft. 6 ins. The accommodation consists of a saloon, owner's private cabin, and spare stateroom, giving sleeping quarters for five persons, and a fore-castle forward for a crew of two men. Connected with the stateroom and saloon is a well-appointed toilet room, while a large galley is arranged forward on the starboard side. A 14 b. h. p. motor will be fitted for use in light winds and calm. Over 5 ft. headroom is to be found in all cabins under the low cabin trunk, which is enough to give a fair amount of comfort.

She is steered by a wheel, the gear being covered in with a casing. The standing rigging is of steel wire rope throughout, and she carries a total sail area of 1774 sq. ft. A freshwater tank is arranged on the starboard side of the cockpit, which is of the watertight type, a useful locker being fitted opposite.

The entrance to the main and owner's cabins is from a companion hatch on the port side, which leads into a passage-way containing the auxiliary engine and fuel tank, while a handy cupboard is arranged for the storage of oilskins, which saves bringing them into the cabin in wet weather. The toilet-room is situated on the starboard side, and can be entered from either the saloon or the owner's cabin which has the usual arrangement of seats and a couple of standing bed berths with drawers under.

A swing folding table is fitted in the main cabin, which is also provided with berths and sofas; from this a small stateroom opens out with one berth. A wardrobe and bookshelves are fitted round the mast.

The galley is entered from the main cabin, and is supplied with oil stove, sink and the usual racks for plates, etc. A solid bulkhead separates this from the forecastle which has fold-back cots and fixed seats with lockers under, the chain locker being right forward.



THE cabin is arranged for the accommodation of the owner and several guests, while there is ample room for a crew of two forward. The motor is conveniently placed and although practically amidships is out of the way in the nook formed by the two main athwartships and the toilet-room partitions.

The Regina Boat Club

Regina, Sask.

TO THE EDITOR OF YACHTING. *March 6, 1919.*

Dear Sir:

IN your issue of YACHTING for January, 1919, you publish the Record of the Bayside Yacht Club in connection with enlistments during the present war in Europe. This article also contains a challenge to Yacht Clubs in the country to equal their record.

I am enclosing herewith copy of our Constitution and By Laws, you will note a reproduction of our Honor Roll on page 4 and a full list of names on page 44 numbering 101, this list includes 20 Lieutenants, 6 Captains, 4 Majors and 1 Lieutenant Colonel, all of whom knew practically nothing of the art of warfare previous to 1914.

Roll of Honour

Abbott, E. L.
Anderson, John F.
Archer, R. C.

Bagshaw, F. B.
Barr, R. W.
Burland, R. J.
Bunn, J. R.

Cameron, J. D.
Carson, R.
Chenoweth, F.
Child, W. Allan
Clawson, H. K.
Clemesha, F. C.
Cross, J. A.
Cromie, T.
Coan, R. C.
Chisholm, Geo. P.
Clarke, H.
Chinnick, W. J.

Dale, C. R.
Davidson, J. H.
Deacon, J. G.
De Witt, Dr. G. E. H.
Dowswell, S. L.
Dedrick, W. V.
Dougans, J. W.

Ferguson, Alex.
Ferguson, A. J.
Ferguson, John F.
Field, Dr. J. J.
Fraser, R. G.
Forsyth, E.

Geddie, G. L.
Grant, Donald W.
Guerin, H. F.

Golder, E. S.
Geddes, A. L.
Guise, F. C.
Garner, A.

Hamilton, M. H. C.
Hamilton, R. W.
Hubbard, A.
Hutchings, D. J.
Hipwell, C. W.

James, F. J.
Jones, E. Y.

Kennedy, W. W.
Kynch, E.

Laurie-Dighton, P. E.
Lee-Grayson, J. H.
Lewington, W. J.
Lough, E. F.
Lovett, A. M.
Laird, W. C.
Laubach, Karl
Lawford, N. C.

Marsh, Geo. H.
Marshall, R. M.
Martin, W. W.
Messenger, A. V.
Milne, E. T.
Marshall, W. C.
McAvity, T. A. D.
McCusker, Emmet
McInnes, Walter
MacKenzie, C. H.
McKinnon, C. N.
McCullough, G. W.
McLean, A. H.
McNeil, W. D.

Nicol, M. J.

Otton, C. E.
Otton, H. A.

Parkinson, H. A.
Porter, E.
Portnall, F. H.
Puntin, J. H.
Paterson, G. I.
Penkoski, P. J.

Reynolds, H. J.
Robertson, J. S.
Ross, J. R.

Scanlan, W. M.
Seale, G. D. H.
Shuley, Geo.
Smith, D. Alpine
Stewart, G. F.
Storey, Stan. E.
Stewart, H. M.
Smith, A. G.

Thomson, J. W.
Thomson, R. B.
Travers, A. G.

Walker, J. L.
Webb, G. P.
Westlake, P. W.
Warren, S. A.
Whitmore, Geo. R.
Wynne-Roberts, L. W.
Wilkinson, M. B.
Wood, C. A.

Our membership just previous to the outbreak of war in 1914 was 171, the membership last year was 80, out of the 101 men enlisted 14 have paid the supreme sacrifice.

I think you will agree with me that the Bayside Yacht Club's challenge has been fairly met in this case.

Yours truly,
THE REGINA BOAT CLUB (Inc.),
(Signed) J. C. PIKE,
Secretary-Treasurer.

REG. U. S. PAT. OFFICE

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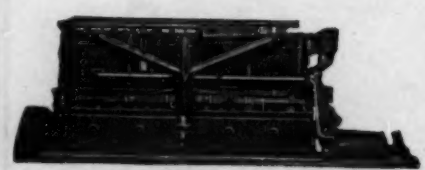

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July 20	In-Bay Race—All H. Y. C. Classes
July 27	Kitten Class
Aug. 16	Stratford Shoal, Open
Aug. 24	In-Bay Race—All H. Y. C. Classes
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Sept. 7	Kitten Class
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Starts and courses will be posted on Bulletin Board at least one week before each race.

Three starts necessary to qualify in the series.

Entries received until 10:00 A. M. the morning of each race.

All Classes except Kitten Class will be raced on a handicap basis.

Courses will be as shown on the Race Committee's Chart (on Bulletin Board), and members are requested to familiarize themselves with the course they sail.

The New Navigation

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IT is in every way desirable that yachtsmen fall in line with the new navy standard practice of navigation. It marks a distinct advance both in precision of results and simplicity of method. It may be of interest to note the sequence and dates of the discoveries and inventions which since the day of Columbus have contributed to the art of finding the position of a ship at sea.

In the past four hundred years note the following:

Year 1556, Mercator projection charts.
1610, Galileo's telescope.
1614, Logarithms of John Napier.
1675, Founding of Greenwich Observatory.
1731, Hadley's Sextant. (Later developed to its present form.)
1765, Marine chronometer.
1837, Sumner line.
1876, St. Hilaire method and Spherical Traverse Table.

Both of these last are probably to be credited to Lord Kelvin, but were developed respectively by Admiral Marc St. Hilaire of the French Navy and Lieutenant de Aquino of the Brazilian Navy.

The slow application of these discoveries is illustrated by the fact that it was not until fifty years after the invention of Mercator that the true principles of the construction of the chart were demonstrated. Over one hundred years after Galileo's invention, which was exactly suited to navigational purposes, navigators were still catching the sun through a peep hole on an illuminated pin. Even this practice was deemed an advance and was itself a new device in 1729. The principle of the reflecting sextant with a telescope was put forward by Newton in 1699 but it was over thirty years before any use was made of his wise suggestion. Probably the only invention promptly utilized was that of the Chronometer. The need for this had long been recognized. The inventor received from the British Government the equivalent of $100,000,—a standing reward for the production of such an instrument. The Chronometer did away with the necessity for the calculation of lunar distances, and yet down to within a very few years, 150 years after the invention of the chronometer, lunars were extensively provided for in the Nautical Almanacs and this in spite of the fact that they required extraordinary care in observing, the best of instruments, the working of a long problem and the results after all with a very large margin of probable error. For about fifty years the Sumner Line has been in use, but is even to-day in the merchant service worked in the crude fashion of its discovery and eighty years after its discovery is still called "the new navigation." The St. Hilaire method is only beginning to come into general practice, forty years and more after its value was demonstrated.

It gives one a fresh view of the boldness of navigators and the perils of the deep in the times of Columbus when we consider that they sailed to an unknown shore and groped their way back without Mercator charts, telescope, sextant, chronometer, almanac, or logarithmic tables, with their latitude in doubt to the extent of one hundred miles or more, taken with a cross staff with the eye directed as well as might be at the same time toward the sun and the glittering horizon, and as for their longitude—.

In the new method three of the old sights are still used and all of these are for latitude, viz., (1) the noon sight of the sun, or meridian sight of stars, (2) the ex-meridian, and (3) polaris as simplified in the current Nautical Almanac.

The St. Hilaire problem, later to be described, now takes the place of the $\varphi'\ \varphi''$ sight for latitude, and the sine cosine longitude sight, both of which are discontinued. It is better than either of them in all cases. The Dead Reckoning position (hereinafter referred to only as D R) must be determined in the usual manner. This locates on the chart an approximate position of the ship and thus furnishes an approximate latitude and longitude. Somewhere near this point, though of unknown location and bearing, is always the Sumner Line of equal altitude. This line can be found by the use of any one of the three last mentioned problems, but the $\varphi'\ \varphi''$ sight was considered unsatisfactory when the sun bore more than 45° east or west of south, and the longitude sight was correspondingly unsatisfactory within these limits.

Figure 1 shows two workings each by the $\varphi'\ \varphi''$ formula and by the longitude formula, while in each case the dotted line and the letters c p show where the St. Hilaire problem would have located the so-called computed point on the Sumner Line. The figure also shows the probable limits on the line within which the ship may be expected to be, these equally distant always from the computed point. The fifth drawing shows the situation when the sun is bearing 45°, in which it is apparent that the point upon the Sumner Line reached by the $\varphi'\ \varphi''$ sight and by the longitude sight, letters a and b respectively, are equally distant from what must be considered the best position at c p. And note that always *the computed point is nearer the actual position of the ship than the original D R position*, and that this is not true of the point on the line indicated by either of the other problems.

It will be evident from the drawings that in each case the computed point can be found by dropping a perpendicular from the D R position, but in practice this has not been done.

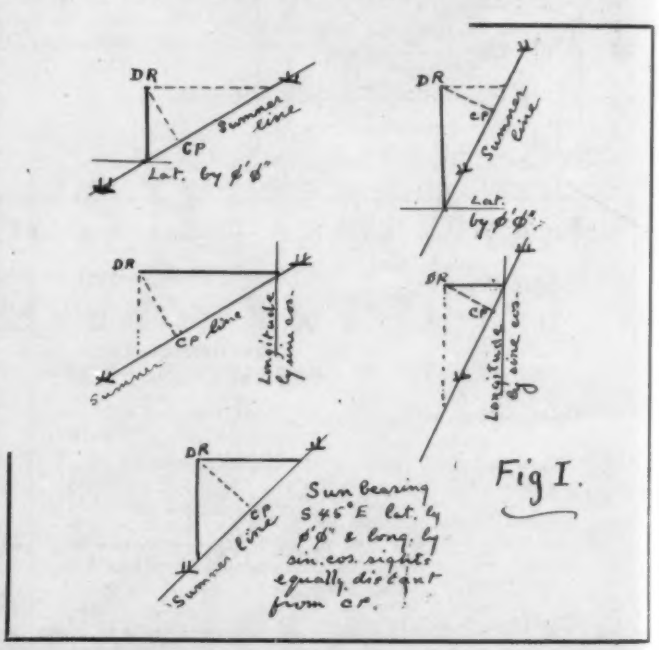

Fig I.

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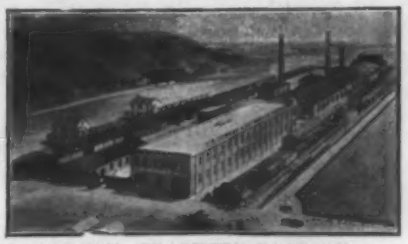

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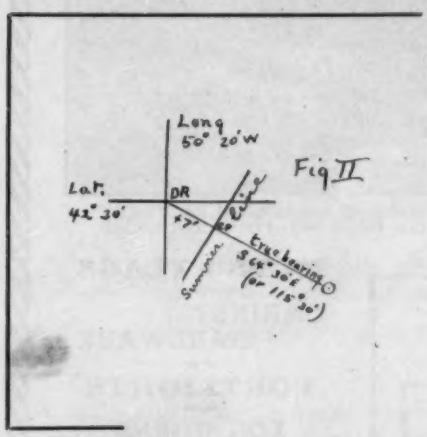
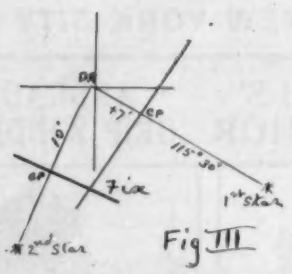
In the φ' φ'' problem the assumption is that in working it we have obtained a latitude, and in the sine cosine problem a longitude. In the longitude problem, the approximate latitude with the altitude and declination of the observed body are used to work out the local hour angle, to be contrasted with the Greenwich hour angle. In the φ' φ'' problem, the altitude and declination together with the approximate local hour angle are used to work out a latitude. In the St. Hilaire problem the declination, approximate latitude and approximate local hour angle of the ship's position are used to determine an altitude for the observed body at the D R position. Under these circumstances the hour angle ceases to be an approximation. It is the exact hour angle of the D R position

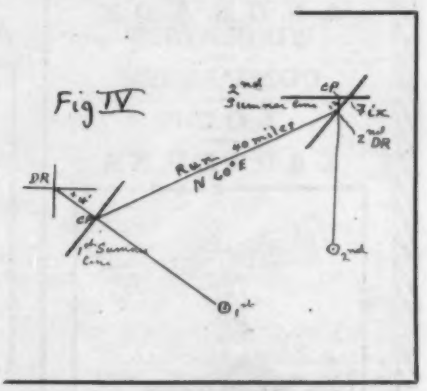


at the moment. The altitude found being contrasted with the altitude observed, the D R point is moved toward or away from the sun directly upon the line of true bearing. It is a little surprising that where only three quantities are used for finding a fourth, better results are had through two approximations and one absolutely known quantity, as against two other methods in each of which there are two absolutely known quantities. It is to be emphasized that the only thing sought in the St. Hilaire problem is the computed altitude of the observed body at the D R position at the moment of observation, not by any means assuming that the position of the ship is at or near that point. Of course, if the altitude thus found differs from the true observed altitude, it is evident that the ship is not at the D R position. The difference between the two altitudes will usually amount to from one to fifteen minutes of arc. The true bearing of the observed body is found from the azimuth tables as e. g. H O No. 71, or No. 120. This bearing is plotted on the chart from the D. R position with the star or sun symbol as shown in the figures herewith. The altitude of the observed body at the moment of observation will be one minute of arc greater for each mile toward the body from the D R position and one minute of less arc for each mile along the line in the opposite direction. It should be evident that the D R point may be shifted on this line of the sun's true bearing to such a point that the calculated altitude will agree with the observed altitude. It has already been stated that the shifted D R position is known as the computed point, as to which it has also been said that the point thus found must always be nearer the real position of the ship than the D R point. Through this computed point and at right angles to the line of true bearing and extending a convenient length both ways from the point is drawn the Sumner line of equal altitude, sometimes known as the line of position. This line may be made a concrete fact to the mind of the reader if he will face the sun with his arms extended at each side. His arms will then indicate the line of equal altitude and if he will think of himself as facing the sun all day



and slowly turning as the sun changes its bearing, he will have a good idea of how this line swings during the hours of the day about the point at which he stands. Of course as the day draws toward noon, the altitude is increasing but it is always the fact that at any given moment the altitude for all points on the line is the same. It is also true of this line that there will be no difference in the true bearing of the sun at any given moment as viewed from any point on the line, e. g. if it bears S 40° 10′ E at the point where the reader stands, it will also bear S 40° 10′ E at all other points on the line at that moment. While it cannot be said that the ship is at this computed point, it is certain that it is on this line of equal altitudes. The D R position may be in error 15 miles or sometimes much more, according to circumstances. This error may be in any direction and therefore we have not so much a position as a circular area with a diameter of thirty miles with the D R position at the center and the ship may be at any point in this area. When the problem has been worked out, the area is reduced to a single line. The ship can be nowhere else than on the line of position or equal altitudes. But the D R position has been moved to the computed point and the ship may still be 15 miles or more from the point in either direction, but only on the line.

To illustrate the foregoing, let it be assumed that Figure No. 2 is a part of a Mercator chart, quite blank except for lines of latitude and longitude. Having worked out the D R position to be latitude 42° 30′ N. and longitude 50° 20′ W., lines are drawn on the chart to correspond and their intersection is marked D R. The true observed altitude obtained by the sextant is 39° 29′. With the above latitude and longitude, the chronometer time of observation and the declination we solve the problem and find the sun's altitude at the D R point is 39° 22′. From H O 71 we find the true bearing of the sun to be S. 64° 30′ E. Through the D R point this line of true bearing is laid out S. 64° 30′ E as in the figure, and with the scale of the chart the difference between 39° 29′ and 39° 22′ of altitude, 7′ of arc is laid off in sea miles from the D R point toward the



sun. Had the observed altitude been less than the calculated altitude the 7′ would have been laid off in the opposite direction. Through the point thus found is drawn the Sumner Line, somewhere upon which, within limits, the ship must be. If instead of the sun the observed body had been a star and within a few minutes another star had been observed, bearing say S. 10° W., with an altitude difference of 10′ toward the star, the second observation would be worked out and plotted and the diagram would have the appearance of Figure No. 3. As the ship would necessarily be upon both Sumner Lines it could only be at their intersection, which in Figure 3 is marked "Fix." The third diagram is the same as Figure 2 except that the body observed is assumed to be not the sun but a star, and another star

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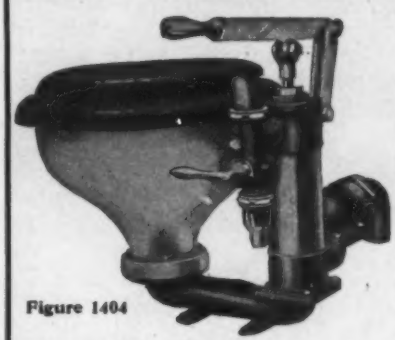

Figure 1404

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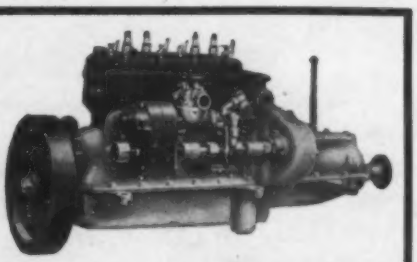

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has been introduced to show the fix.

In Figure No. 4 the body observed is the sun. Two hours have elapsed between the two observations and the ship's run of forty miles S 60° E has been found by D R and laid off on the chart from the first computed point. It will be noted that the first Sumner Line has been brought forward parallel to itself through the termination of the ship's run, which termination also gives us the new D R point for the second problem. Figures 5–8 should be self-explanatory but the lines of bearing are reckoned from North by East through the whole circle, the navy practice. These examples might be multiplied. Those who are fortunate may obtain the Pilot Chart of the North Atlantic, published by the Hydrographic Office, for sale at ten cents, upon the back of which is a statement of the Sumner Line problem by Lieutenant Commander Chase, U. S. N., with a number of problems worked out and plotted. There is some doubt whether the publication of these problems is to be continued.

Strictly speaking the Sumner Line is not a line. The computed point, by reason of small errors of observation and computation, is not a mathematical point but rather a space of a half mile or more in diameter. The line therefore has the same breadth and the "fix" is an area of square or diamond shape in any part of which the ship may be. If three bodies are simultaneously observed, theoretically the three lines of position should meet in a point. But in practice they never do but form a triangle. In this case the best position of the ship is within the triangle as near its center as practicable. In theory the best position is found by bisecting two of the angles of the triangle and taking the intersection of the bisecting lines as the fix, as in Figure 9.

The St. Hilaire formula is as follows:

haversine Z = haversine (L ~ d) + cosine L cosine d haversine t

in which Z = Zenith Distance of observed body

L = D R Latitude

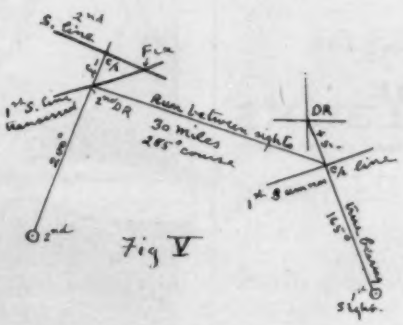
d = declination of the body

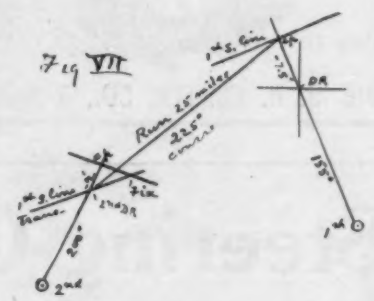
t = hour angle of said body, whether east or west of the local meridian.

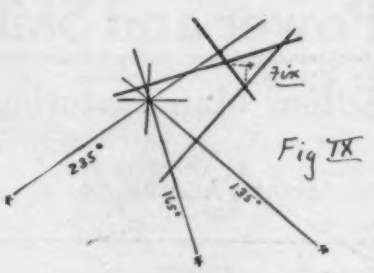
h = altitude.

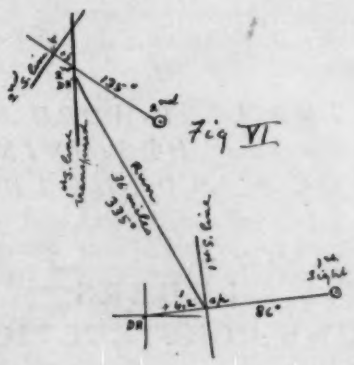
In preparing the known quantities for the formula the usual method is followed of correcting the declination and equation of time to the moment of observation, and the observed time by applying the equation of time, also by applying the D R longitude in hours to obtain local apparent time (L A T). If the sun is the body observed and is west of the meridian L A T is the quantity t. If the sun is east of the meridian, the difference between L A T and 24 hours is the quantity t. As the haversine tables in Bowditch give haversine values corresponding both to t and to L A T it is not strictly necessary to perform the subtraction. The waved line between "L" and "d" in the formula is the symbol of algebraic difference. At the same time indicating that it is immaterial which quantity is larger. As southerly latitude and southerly declination is taken to be minus, if one is north and the other south, they are numerically added, while if both are either north or south, the smaller is subtracted from the other. In any case the sign of the result is disregarded. As a matter of fact the haversine of an angle of less than 90° is one-half of what is left after subtracting the cosine of the angle from the radius of the arc. However, the table can be used by one who has no clear idea of this fact but who is able to work with the usual logarithmic tables.

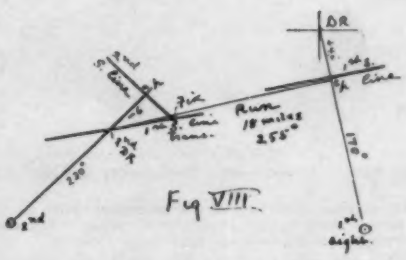
One requirement of all formulas to be worked out by logarithms is that they shall be cleared of all plus and minus signs. The formula in question contains a plus sign and therefore as a whole it must be worked out with natural functions. The only use which can be made of logarithms in connection with it is to multiply together the three factors cos L cos d haver t and to obtain as a product the same result as if the natural functions had been multiplied together. Their logarithmic sum is called Log haver θ, and the corresponding natural value is called Nat











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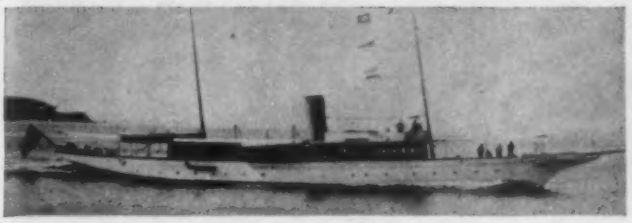
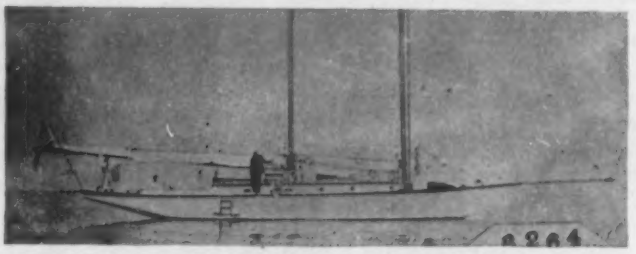
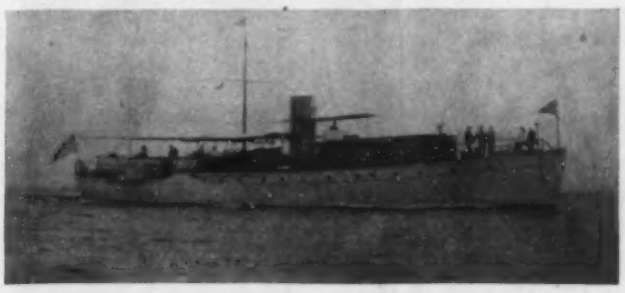


NO. 232—FOR SALE—Handsome 145 foot steam yacht. Roomy accommodations. Deck, dining saloon and social hall. Entire outfit fine condition. Located New York. Gielow & Orr, 52 Broadway, N. Y. City.



NO. 6264—FOR SALE—Desirable 35 ft. water line auxiliary keel and center board schooner. Lawley build. Murray & Tregurtha motor, giving speed seven miles. Accommodations furnished. One stateroom, main saloon. Sleeping six persons. Exceptionally complete inventory. Outfit first class condition. Exceptional bargain. Quick sale. Gielow & Orr, 52 Broadway, New York City.

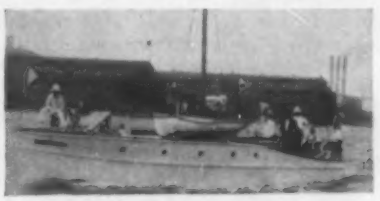


NO. 4591—FOR SALE—Handsome steel twin screw motor yacht. 126 foot deck, 18½ foot beam. 6 foot draft. Built by Seabury from our design. One of best available yachts of size. Fully equipped. Has Sperry stabilizer. Hot water heated. Inspected Great Lakes. Gielow & Orr, 52 Broadway, N. Y. City.

NO. 6260—FOR SALE—Modern twin screw 85 ft. motor yacht. Maximum speed 15 miles. Two double, one single stateroom. Hot water heated. Complete equipment. Price low. Inspectable Great Lakes. Gielow & Orr, 52 Broadway, New York City.

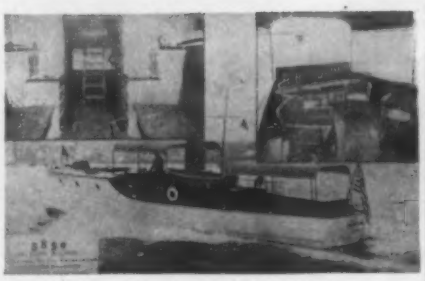
NO. 4923—FOR SALE—45' Elco cruiser. 11 foot beam. Accommodates 6 persons. Standard motor. Completely equipped, perfect condition. Inspectable Boston. Gielow & Orr, 52 Broadway, N. Y. City.

NO. 2549—FOR SALE—Attractive keel cruising sloop. 50 foot deck, 30 feet W. L. 11 foot beam. Built by Lawley. Fully equipped, perfect condition. Inspectable Boston. Gielow & Orr, 52 Broadway, N. Y. City.



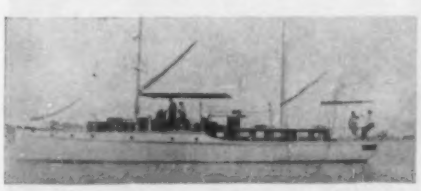
NO. 4441—FOR SALE—Desirable 45 foot cruiser having 11 foot beam. Accommodates 4 persons. Self starting Sterling motor. Speed 10 miles. Fully equipped. Inspectable New York. Gielow & Orr. 52 Broadway, N. Y. City.

NO. 3241—FOR SALE—Handsome Lawley built auxiliary keel schooner. 80 foot W. L. 23 foot beam. Steel construction. Standard motor, speed 8 knots. 4 staterooms. Fully found and perfect condition. Gielow & Orr, 52 Broadway, N. Y. City.



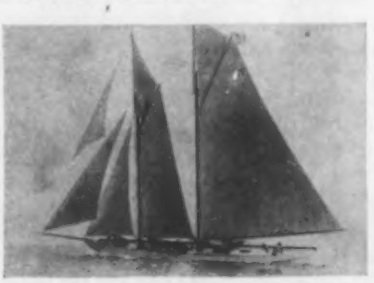
NO. 5850—FOR SALE—50 foot Hand V bottom express cruiser. Sleeps 4 persons. Van Blerck motor. Speed 20 miles. Heavy construction. Fully equipped. Gielow & Orr, 52 Broadway, N. Y. City.

NO. 4199—FOR SALE—Desirable twin screw 90 foot cruiser from our design. Built best possible manner. Able sea boat. Has cruised from New York to Cuba. Heavy duty motor. Speed 12 miles. 3 staterooms and main saloon. Price attractive. Gielow & Orr, 52 Broadway, N. Y. City.



NO. 4606—FOR SALE—64' sea going cruiser. One double, one single stateroom. Heavy construction. Completely equipped, including launch tender. Gielow & Orr, 52 Broadway, N. Y. City.

NO. 5455—FOR SALE—48 foot shoal draft bridge deck cruiser. 14 foot beam. Exceptional accommodations below and on deck. 40 H. P. Heavy duty motor. Equipment complete, all perfect condition. Gielow & Orr, 52 Broadway, N. Y. City.



NO. 1640—FOR SALE—Attractive Lawley built schooner. 85 foot W. L. 24 foot beam. 3 staterooms completely equipped and in best condition. Has cruised to Bermuda and is very able sea boat Gielow & Orr. 52 Broadway, N. Y. City.

haver θ by convention. There is, however, in fact no haversine and no auxiliary angle. These are mere fictions.

As will be evident in the following problem taken from page 157 of Bowditch, the logarithmic functions of t L and d are added together, and the logarithm under the title Log hav θ is reduced to its natural value as a number, from which point the problem is solved by the use of natural haversines and consists only in the addition of the natural haversine of L~d and the inspection of the table to find the angular value of the product. The problem is as follows:

t 19h 32m 00s	log hav		9.48378
L 41° 30′ 00″N	log cos		9.87446
d 19° 31′ 18″N	log cos		9.97429
	log hav	θ	9.33253a
	nat hav	θ	0.21505
L~d 21° 58′ 42″..	nat hav		0.03634
Calculated			
z 60° 11′ 00″..	nat hav		0.25139b
90° = 89° 59′ 60″			
Calculated			
h 29 49 00			
Observed			
h 29 50 04			
Altitude—			
Difference 1′ 04″			

Note a. In the Haversine Table the Log Haversine and corresponding Natural Haversine are in adjoining columns. Having found Log hav 9.33253, next to it will be found 0.21505 in heavy type.

Note b. Nat. hav. 0.25139 is looked for in the tables and the corresponding value 60° 11′ for z is taken out as Zenith Distance.

This problem is not subject to variation by reason of the values of its quantities.

If some other body than the sun is observed it will be necessary to work out the local sidereal time (L. S. T.). The difference between this and the right ascension of the body gives the hour angle t, it being immaterial whether the hour angle is less or more than the L. S. T. The declination of such a body, if greater than 23°, is taken from H O 120.

There are two alternative formulas for solving the problem. One uses haversines only and the other avoids haversines entirely. Neither of them escapes the plus sign and therefore both of them have fictitious quantities similar to θ and the change from logarithms to natural functions. Neither of them diminish the labor of solution, but the sine cosine formula would be of use in the absence of a haversine table. It may be noted that H O 200 has on its inside cover a sample St. Hilaire problem and also it has an excellent haversine table.

It cannot be too strongly emphasized that no matter where the D R position may be placed, in an area of approximately 30 miles diameter, the latitude and longitude of the position combined with the Greenwich mean time of observation will locate the same line of position, the Sumner Line. The position of the computed point will vary. This is illustrated in Figure 10, in which the D R position is taken in succession at a, b, c, d and e. The solution of the problem in each case with the slightly different latitude and longitude will result in a different altitude difference as shown by the distance of a, b, c, d, e, and from the line, and the corresponding computed points are a′, b′, c′, d′, and e′. It will be evident therefore that it is always permissible and frequently advisable to shift the D R position slightly to obtain an even number of minutes of latitude for the problem and this is true both with respect to the original D R position and to the secondary D R position at the termination of a run between sights plotted from the first computed point. The first Sumner line as brought forward is not moved. The D R position chosen may or may not be upon it. The longitude of the chosen point may be found by construction in the manner about to be described.

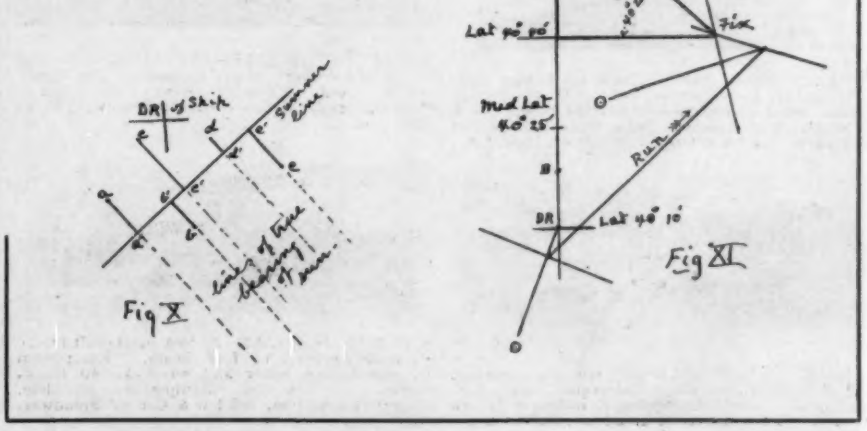
In passing it may be noted that t is the hour angle east or west of the local meridian, while H A is the hour angle to the west of the meridian up to the full circuit of 24 hours. If the body is east of the meridian the sum of H A and t will always be 24 hours.

In H O 200 will be found the de Aquino method of solving the problem without logarithms by the inspection of spherical traverse tables there given. There are three alternative methods and no doubt the first and simplest of these is more quickly worked by an expert than the St. Hilaire formula. It involves however a considerable shifting of the D R point, thus giving a less satisfactory computed point, and the third of the methods involving interpolations but utilizing the D R position, loses the slight advantage of speed. Each of these methods is subject to four variations according to the location in the heavens of the observed body, and in the opinion of the writer none of them are suitable for students.

To those who examine the Pilot Chart problems, a word of suggestion will not be amiss, and this would be to note the way in which the L S T for the first star of a problem is utilized for the other stars by adding to it the few minutes which intervened between sights. Also to note that in the morning sights the chronometer time has been set down without adding twelve hours to obtain true astronomical time. In problems VI and VII the westerly hour angle of Jupiter is in fact 18 hr. 50 m. 24 s. and the right ascension of the moon is subtracted from 20 and 22 hours respectively and not from 8 and 10 hours respectively as it appears to be.

It is not necessary here to enlarge upon the fact that the Sumner Line is a short arc of a circle of great diameter. As the sun is nearer to the Zenith the approximate limit of length of the line is diminished and the limit of altitude may be set at about 75°. The approximate length of a degree of the circle of equal altitude with the sun at an elevation of 75° is 15 miles. The curvature beyond this distance would begin to be apparent in the sun's bearing and the change of bearing beyond that point would rapidly increase. This change of direction of the bearing is dependent solely on the size of the circle, as no matter what the altitude, on all such circles there are points from which the sun bears

(Continued on page 163)



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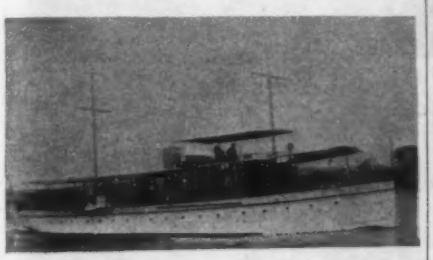
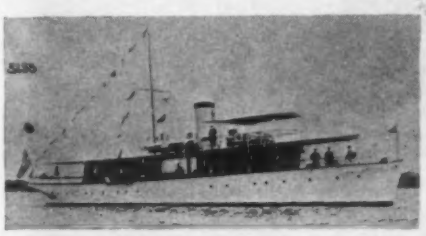
NO. 2366—FOR SALE—Most desirable large steel twin screw cruising power yacht available. 126 x 18.6 x 6 ft. Recently built in best manner; exceptionally able craft. Speed 12-14 miles; two 125-150 H.P. 6 cyl. air-starting motors. Large deck dining saloon; main saloon, five staterooms, two bathrooms, etc., aft. All conveniences. Handsomely furnished. Cox & Stevens, 15 William St., New York.



NO. 1796—FOR SALE OR CHARTER—Very roomy, light draft, twin screw cruising power yacht, 99 x 17 x 4 ft., adapted for Florida service. Speed 12-14 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms; all conveniences. Cox & Stevens, 15 William Street, New York.



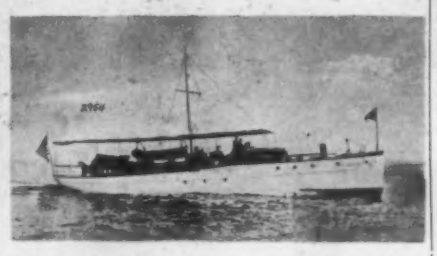
NO. 3233—FOR SALE—Particularly desirable 123 ft. steel steam yacht. Speed up to 17 miles. Recent build. Dining saloon and social hall on deck; five staterooms, two bathrooms, etc. Best craft of type and size available. Cox & Stevens, 15 William St., New York.

NO. 1835—ESTATE ANXIOUS TO SELL—Handsome, twin-screw cruising power yacht; 98 x 16.6 x 4.6 ft. Speed 14-16 miles. Deck dining saloon, four staterooms, bath, two toilets, etc. Very desirable yacht available at low figure. Cox & Stevens, 15 William St., New York.

NO. 2758—FOR SALE—Most desirable up-to-date 65-ft. cruiser available. Speed 11-12 miles. Remarkable accommodation, including deck saloon forward,—dining cabin, double and single stateroom and bathroom aft. In splendid condition (Has not been in Government service). Cox & Stevens, 15 William Street, New York.

NO. 1828—FOR SALE—Cruising power yacht; 75 x 13 x 3'. Speed 11 to 12 miles; 50-60 h. p. Standard motor. Dining saloon and galley forward; three staterooms, bathroom and two toilets aft. Excellent condition. Cox & Stevens, 15 William St., New York.

NO. 3299—FOR SALE—Modern, roomy bridge deck cruiser; 60 x 13'6" x 3'6" draft. Speed 11-12 miles; 65-75 H. P. "20th Century" motor. Large double stateroom; saloon with two extension berths, galley, bath, etc. Bargain for quick sale. Cox & Stevens, 15 William St., New York.



NO. 2954—FOR SALE—Twin screw power yacht; 71 x 13.3 x 3.6 ft. Speed up to 16 miles; two 6 cyl. 90 H. P. Speedway motors. Dining room forward, three staterooms, bathroom and vestibule containing transom berth aft. Price attractive. Cox & Stevens, 15 William St., New York.

NO. 2560—FOR SALE—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sitz bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.

NO. 3427—FOR SALE AT LOW FIGURE—Fast, roomy, twin screw cruising power yacht; 74 x 14 x 3.9 ft. New 1916; Lawley built. Speed up to 16 miles; two 6 cyl. "Speedway" motors 110-120 H. P. each. Large saloon, three staterooms, shower bath, etc. Cox & Stevens, 15 William Street, New York.

NO. 1662—FOR SALE OR CHARTER—Attractive 90 ft. twin screw gasoline houseboat; speed 10-12 miles. Large saloon, four staterooms, two bathrooms; all conveniences. Handsomely furnished. Cox & Stevens, 15 William Street, New York.

NO. 3541—FOR SALE OR CHARTER—Particularly desirable 100 ft. steel twin screw cruising power yacht. Very attractively finished and furnished. Speed up to 15 miles; two 6 cyl. air-starting and reversible Standard motors. Fitted with every convenience. Large dining saloon and social hall on deck; five staterooms, bath, two toilet rooms, etc. Without doubt finest craft of type and size available. Cox & Stevens, 15 William Street, New York.

NO. 148—FOR SALE—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall, 110 ft. waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9 knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William Street, New York.

NO. 1728—FOR SALE—Flush deck steel auxiliary schooner 114 x 80 x 23 x 10 ft. Lawley Build. Speed under power 9 knots, 100-125 6 cylinder Standard Motor. Two double and two single staterooms, large saloon, bathroom and two toilets. Sails new in 1916. Completely found. In excellent condition. Price attractive. Cox & Stevens, 15 William Street, New York.

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A fascinating picture-story of Colonel Roosevelt's visit to one of the amazing wild bird sanctuaries he was instrumental in creating; and the adventures of an American boy who practised the Colonel's woodland teaching

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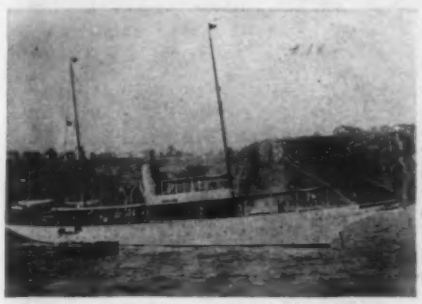
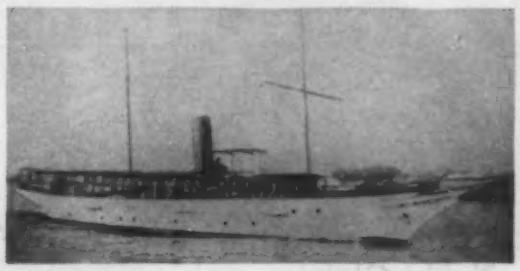
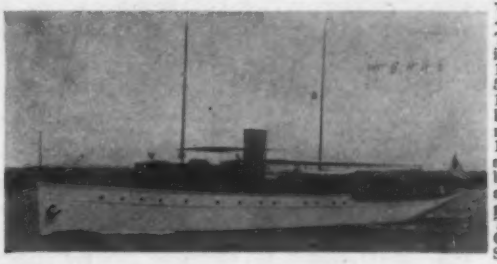


NO. 18—FOR SALE—Owned by Estate—Exceptional opportunity to purchase first class steam Yacht at a bargain figure. 147 ft. x 17 ft. x 7 ft. draft. Triple expansion engines; Almy boilers; speed 15 knots. Large owner's accommodations. Further particulars from Tams, Lemoine & Crane. 52 Pine Street, New York



NO. 7987—FOR SALE OR CHARTER—Modern cruising motor yacht 106 x 13.6 x 6 ft. draught. Built 1911. 300 H. P. Standard motor; speed 13 knots; 4 staterooms, saloon below, deck dining saloon, bath room, 2 owner's water closets. Lighted by electricity. Large quarter and bridge decks. Full data from Tams. Lemoine & Crane, 52 Pine St., New York.



NO. 8448—Sale or Charter—Twin screw cruising motor yacht 123' x 18' 6" x 5'9" draft. Built 1912. Two 100 h. p. 20" Century motors. Speed 13½ miles. 6 staterooms, 2 bathrooms, 3 saloons, etc. Full particulars from Tams, Lemoine & Crane, 52 Pine Street, New York.

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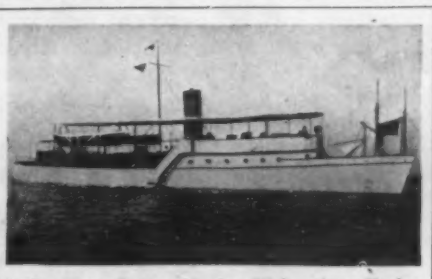
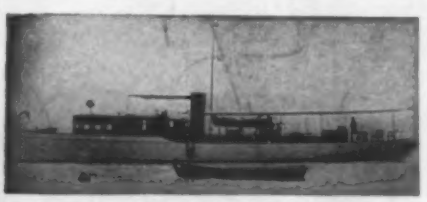
NO. 1738—Raised Deck Cruiser, 65' x 11', six cylinder motor; good accommodation. Apply William Gardner & Company, 1 Broadway, New York.

NO. 2129—FOR SALE OR CHARTER—Bridge deck cruiser, 51 ft. x 10 ft. x 4 ft. Double stateroom, saloon, galley, etc. Apply William Gardner & Co., 1 Broadway, New York.



NO. 924—Power Yacht, 92 ft., six-cylinder 20th Century motor recently overhauled, good deck space. Apply William Gardner & Co., 1 Broadway, New York.

NO. 393—FOR SALE—Steel steam yacht, 139' x 18' 3" x 7' 6" draft. Has dining saloon, social hall and pantry on deck. Five staterooms, 2 bathrooms, galley, etc., below. Completely equipped. Apply William Gardner & Co., 1 Broadway, New York.



NO. 1081—FOR SALE—Twin screw 90 ft. power yacht, splendid accommodation. Recently overhauled and two new Standard 4 cylinder 75 H. P. each, installed 1916. Exceptionally able and fully found. Apply William Gardner & Co., 1 Broadway, New York.

NO. 2343—Practically new, twin-screw 60 foot express cruiser, Sterling engines, speed 22 miles. Apply William Gardner & Co., 1 Broadway, New York.

Of Interest to the Skipper

Officers of the Riverton Yacht Club

At a recent meeting of the Riverton Yacht Club the following officers were elected:

Commodore, R. M. Hollingshead; Vice-Commodore, George W. Edwards; Secretary, J. Linton Rigg, 305 Main St., Riverton, N. J.; Treasurer, Charles B. Durborow, Second and Main Streets, Riverton, N. J.; Measurer, H. B. Hills; Finance and Elective Committee: *R. W. Knight, H. H. Watkins, Jr., A. G. Cook, Robert Biddle, 2nd, John H. Reese. Regatta Committee: *H. H. Watkins, Jr., John H. Reese, John G. Seckel. Swimming Committee: *Charles B. Durborow, R. M. Hollingshead, George W. Edwards, J. Linton Rigg, L. duB. Handley, James H. Sterrett, Violet Rigg, Marjorie Marcy. Trapshooting Committee: *J. D. Clark, J. H. Reese, Robert Biddle, 2nd, R. H. Stackhouse. Delegates to A. P. B. A. and D. R. Y. R. A.: Maurice G. Belknap, Charles B. Ford.

*Chairman of Committee.

Woman Sea Captain

TATSU IMAMIZO, a young woman aged 20, who lives at Kawajirimura, Kamogun, Hiroshima prefecture, has secured a license as ship Captain, says *The Mariner's Advocate*, an unusual achievement in Japan. Her father is owner and Captain of a collier, and the daughter has sailed with him in the Inland Sea. She applied to the authorities for a captain's license examination. At first the authorities were astonished, but as there is no discriminating provision between sexes in the examination regulations, her application has been accepted. She will be the first woman Captain in Japan in case of her success, and the pioneer applicant in the new field of activity even in case of her failure in the examination.

Sterling in Boston

THE Sterling Engine Co. is now represented in the New England territory by W. H. Moreton, of 214 State Street, Boston, Mass., with whom is associated Morrie Brotherton, well known to boating circles in that district as having been associated with the previous Sterling representative.

Peace

IN nineteen months of war the United States transported overseas approximately 2,100,000 men, and lost by enemy attack 758.

In the year of 1912, in peace time, two sea disasters alone cost the lives of 2500.

The welcome end of the war does not mean the end of danger to human life at sea. The menace of the submarine, while spectacular and terrible in form, was offset by the vessels traveling in convoys, with extraordinary precautions and trained alertness, and help was not far away if disaster came. In peace times ships travel alone, with ordinary safeguards, and in the event of trouble or disaster must depend upon help summoned by wireless—and it may be a matter of many hours before the help arrives.

With the coming of peace there will be more shipping, more travel, than ever before in the world's history. No one doubts this. President Wilson sees a "pitiless competitive market." With vessels rushing from port to port in the race for commercial supremacy, loaded to the utmost, speeding 'mid unseen perils, without the benefit of convoy, passenger-carrying ships will face far greater danger than ever before.

As a means of self-preservation, the Ever-Warm Safety-Suit will take its part in this race and rivalry, not only of steel and steam, but of humans. It was conceived for peace time; it has been tried and proven, and now comes the period foreseen for its greatest service—and to the greatest number of people. It affords absolute safety and complete protection. It will keep the shipwrecked dry and warm, afloat until rescue comes.

It will save you from drowning, preserve life and health. Knowing this, and having one, you will travel the seas with no sense of fear, but with peace of mind.

Interior Floor Paint

PAINT suitable for use on interior floors will not give satisfaction when applied to exposed or partly exposed surfaces; similarly one manufactured for outside use is unsuitable for inside work. Therefore floor paints are made both for inside and outside work by separate mixtures and processes.

Do not attempt to make one grade of paint answer for both classes of work for dissatisfaction will surely follow, and the small amount of money saved will not begin to repay you for the trouble. The primary requirement of any paint is protection, and this is not hard to obtian in paints to be used on wall and ceiling surfaces.

A floor paint, however is subjected to the wear of many feet. Every time you walk across a floor which has been painted, there is an abrasive action which tends to disintegrate the paint film. This abrasive action would be reduced to a minimum if paint were made of a soft texture, so that the film itself could absorb this grinding action but the result would be a sticky, tacky condition.

A floor paint must be hard, but if too hard, it becomes brittle and does not adhere to the surface.

The most inexperienced person can apply a good floor paint successfully and once applied it forms a tough film, dries hard overnight, effectively seals the surface against the absorption of foreign materials which may be carelessly spilled upon it. Frequent washing will eventually dull its gloss; in time the film will dis-

(Continued on page 161)

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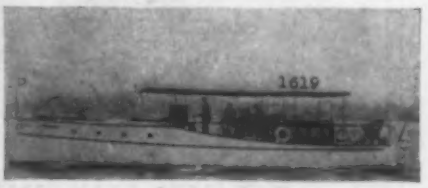
NO. 1812. Elco cruiser 45' x 41'9" x 10'7" x 3'6". Double stateroom, main cabin and engine room sleep eight people. Two toilets. 32-37 H. P. Standard Motor. Speed 10¼ miles. Apply H. H. Jennings Company, 1 Broadway, New York City, N. Y.

NO. 2014. Twin screw express cruiser. 71' x 71' x 13' x 3' 3". Built 1917. One double, two single staterooms. Main cabin with Pullman and transom berths. Two toilets. Two 350 H. P. Duesenberg motors installed 1918. Speed up to 24 knots. Apply H. H. Jennings Company, 1 Broadway, New York.

NO. 4302. Keel Yawl 50' x 35' x 13' x 7'. Built 1904. Single stateroom. Four berths in main cabin. Toilet. Two berths and toilet in forecastle. Price attractive. Apply H. H. Jennings Company, 1 Broadway, New York City, N. Y.

NO. 1542. Express cruiser 56' x 55' x 9'3" x 3'6". Built 1914. Double stateroom. Three berths in main cabin. Two toilets. Two berths and toilet for crew. 8 cylinder 120 H. P. Sterling Motor. Speed, 20 miles. Apply H. H. Jennings Company, 1 Broadway, New York City, N. Y.

NO. 3826. Auxiliary keel schooner. 64' x 43' x 14' 6" x 8' 10". Two staterooms, saloon with two berths and two transoms, toilet. Four berths and toilet in forecastle. 18-25 H. P. Sterling motor installed 1914. Owned by an Estate. Apply H. H. Jennings Company, 1 Broadway, New York.



NO. 1619. Bridge deck cruiser 46' x 45'4" x 11' x 3'6". Built 1914. Double stateroom, two berths in main cabin, two berths in engine room, Two toilets, 50 H. P. Speedway motor. Speed 11-12 miles. Apply H. H. Jennings Company, 1 Broadway New York City, N. Y.

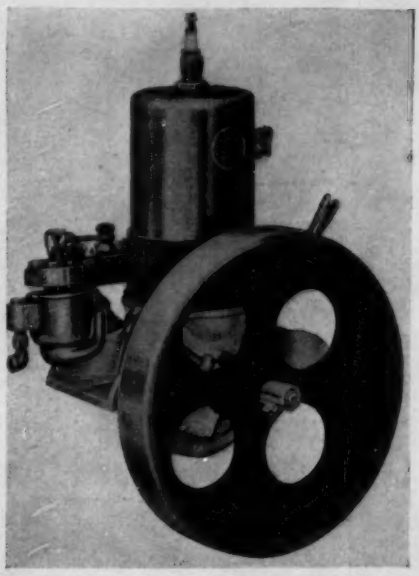
What Is Going to Happen in Yachting Circles

(Continued from page 130)

appeared more promising than it does at the present time. Of course, it was too late at the time the armistice was signed to contract for large yachts for this summer's use, but we have several contracts for pleasure boats up to 75 feet in length for delivery this season. In some cases these boats are being constructed simply to tide the owners over this coming summer and for the winter in Florida waters. During this time, though, designs for large yachts are going forward for the building and delivery in 1920 and 1921, in which years" the official continued, "yachting will again come into its own. The very aspect of the situation from our point of view leads us to no other conclusion, than that our shops will be kept very busy from now on. Our stock propositions up to and including our 52' stock models, are being rapidly bought up, and from our inquiries we seem to sense a scarcity of boats of this size that are ready for immediate delivery. Upon the signing of the armistice, and the cancellation of war contracts, we immediately returned to the building of stock models, and up to the present time we have just kept pace with the demand, but the time is fast approaching when we cannot make deliveries on the smaller types of boats for this season's use. The reason why we took this attitude, and were confident of the demand, was due to the fact that we were reasonably sure that those owners who had so patriotically answered the call for boats at the declaration of war, would return for new ones; and that many of those young men who enlisted in the United States Naval Reserve Force, returning to civil life with a little salt water tang still lingering in their nostrils, would call upon us for pleasure craft. So, you see, coupled with normal business is this added demand which justified our opinions."

"What about the 10% Revenue Tax" the official was asked. "Well" said he. "It is my opinion that the 10% Revenue Tax will affect yacht building to a certain degree. Many of the yachtsmen will defer building large boats on account of this tax, while others will build notwithstanding the tax. And, further, we are all paying our share. The war debt must be paid. Just because 10% is levied upon the building and sale of pleasure craft is no reason why we as manufacturers should go out of business. The tax, my friend, will be paid, and when our war debts are settled, and excessive taxation reduced to normal again, the yachtsmen who are now holding off will, or should come back with additional enthusiasm for this health giving sport. We are quite sure that the big revival in yachting will not come until the tax is reduced, but I am equally sure that we shall see some activity in the coming seasons, and the imposition of the present tax, to my mind, carries no consolation to the pessimist who has been shouting around that the 10% Revenue Tax would put a "crimp" in yachting."

ARROW



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The Model K-2 for instance weighs only 60 lbs., and may be installed in an ordinary rowboat without any preparation by anyone who is handy with tools. The lack of vibration will surprise you—notwithstanding the fact that this model develops 5 H. P. Built in our own factory it comes to you with a guarantee as to the quality of material and workmanship put into it. A reliable 2 cylinder engine equipped with aluminum crank-case and copper water jacket.

ONE OR TWO CYLINDER MODELS

The single cylinder, Model K-1, is a 2½ H. P. motor weighing but 36 lbs., that performs consistently day in and day out. It is especially suitable for installation in canoes and small rowboats. Arrow-Waterman Motors offer you every desirable feature in small boat power plants. They may be seen at any time at our factory or a descriptive catalogue will be sent upon request.

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Yacht Sales of Interest

FRANK BOWNE JONES, Yacht Agent, reports the sale of the following yachts through his agency: 55-ft. gas cruiser, *Dinkle*, sold for W. E. Ferguson, Jr., to John H. Tyson. 53-ft. gas cruiser *Lady Evelyn*, sold for Edwin A. Shewan to Christopher Baltus. 50-ft. gas cruiser, *Gertrude*, sold for Alfred Thomas to J. G. Wilson, Corp. 41-ft. w. l. auxiliary schooner, *Javelin*, sold for William W. Grier to Louis H. Joy. 47-ft. w. l. sloop, *Medora*, sold for H. G. S. Noble to a member of the New York Yacht Club. 28-ft. w. l. yawl, *Istar*, sold Est. Brooks H. Wells to Lionel A. dePosch. 26-ft. w. l. auxiliary yawl, *Marchesa*, sold for Lionel A. dePosch to Wm. J. Reid. 26-ft. w. l. auxiliary yawl, *Squirrel* sold for C. D. Reynolds to David M. Myers. 38-ft. w. l. sloop, *Pellegrina*, sold for Seward Prosser to B. K. Sharp. 20-ft. w. l. sloop, *Gazelle*, sold for John H. Stone to Harold B. White. Sloop, *Star Faraway*, sold for A. B. Fry to George A. Corry. Larchmont Interclub sloops, *Yuron*, *Babette* and *Hamburg II*, sold to members of the Riverton Yacht Club. Auxiliary schooner yacht, *Fareeda*, sold by Mr. Alexander Van Rènssealer to John H. Cromwell of New York. 30-ft. w. l. schooner, *Allure*, sold by Mr. Parker Kemble to Mr. J. H. and E. P. Alker of New York.

* * *

Orienta Yacht Club Plans Active Service

AT the annual meeting of the Orienta Yacht Club the following officers were elected for the season of 1919:

Commodore, Emanuel J. Lascaris

Vice-Commodore, Walter Underhill

Rear Commodore, Edward J. Faille

Treasurer, William J. Kuder

Secretary, Franklyn A. Farnsworth

Trustee, Joseph Bister

During the past year the club house has been turned over to the Red Cross for work rooms and all local Liberty Loan, W. S. S. and other drive committees have made their headquarters there.

There have been 48 members in the service, 20 in the navy and 28 in the army, making 30% of the membership.

Floor Paint

(Continued from page 158)

appear but a high quality interior floor paint will never crack, check or peel off, it will never fade, and it will always give you satisfaction and service.

* * *

Six Sheets of Number One Sandpaper, Please

(Continued from page 140)

out, and other gear rigidly inspected for weak spots. Do not forget your anchors and anchor lines when making the inspection. The safety of your boat and maybe the safety of your life depends upon the ruggedness of the riding gear. It is surprising the number of people who will put down a heavy mooring and leave it down year after year without inspection. Of course in some cases it is practically impossible to raise a mooring after it is down without calling upon the services of a powerful floating derrick. If this is the case, and the mooring is not in too deep water it will be possible to send some good swimmer down the chain who can tell a good deal about the wearing of the chain by feel.

We now come to the final work, the painting of the boat on the outside. Even if the paint is in excellent condition, you should clean off first with No. 1 sandpaper. In the case of a boat with the paint badly chipped off, and very thick, the best method is to burn it all off with a gasoline torch and start anew. In the usual case however you will only need to put on two coats of bottom and two coats of topside color. Put one coat of topside on, and then a coat of the bottom, being sure that the topside coat has become fairly dry before trying to cut the water line. Next put on the last topside coat and then the final coat of bottom. Some of the bottom paints dry better in the water than they do out, so if your paint man agrees, it is a good scheme to put on the last bottom coat only a few minutes before she goes over. This method will not do however where the boats are launched other than on a regular launching car. If you launch with rollers you will scrape off all the wet bottom paint.

Whether you have time, or money to do all of the things outlined in this article depends entirely on circumstances, but at any rate get her launched. Let us hope that never again will we see the number of boats hauled out during the summer that we saw during the last season.

Trap Shooting Becomes of World-wide Importance

No. 4
American Marksmen Series
Painted for Remington UMC
by F. X Leyendecker

EVERY man who makes trap shooting one of his recreations thereby contributes both to his own pleasure and success in life and to the success and security of his country.

The present great world demand for American leadership raises this long popular, valuable and distinctly American pastime of virile men to greater-than-ever importance.

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for Shooting Right

What of the trap shooting club in your community? Is it up and doing?

Is your local dealer one of the 82,704 live merchants who sell the most popular trap guns and shells, winners for many years of the majority of state and national trap shooting honors—Remington UMC?

Are you and your club receiving through him our long established free service to individual trap shooters and trap shooting clubs?

Has any one of the 79 traveling representatives of the nation-wide Remington UMC *organization*—the organization with more than one hundred years of fire-arms manufacturing experience back of it—been a visitor at one of your recent shoots?

Our Service Department will be glad to hear from you and to assist in the several ways it can.

Gun Club Secretaries—Write at once to our Service Department for blank registration card for Remington UMC free service to trap shooting clubs.

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For the Skipper's Book Shelf

THE author of *The Small Yacht*, Edwin A. Boardman, has had large practical experience in designing and sailing small yachts, having won the Seawanhaka cup from the Canadians in 1905, and in this book he describes in plain language, which may be easily understood by the amateur, some of the best methods for tuning up a boat. He also explains the various ways and means of extricating one's boat from, and gaining advantage of, a competitor. The rules given have, in the majority of cases, proved successful and are in use by crack amateur sailors.

Little, Brown and Company, Boston are the publishers of *The Small Yacht*.

✿ ✿ ✿

THE British Navy in Battle, by Arthur H. Pollen, the leading naval critic of Great Britain and published by Doubleday, Page & Co., New York, is so authoritative that the British Admiralty will use it as a guide for reconstructing the British Navy in accordance with the lessons learned in the war. Some of the subjects taken up by the writer are Sea Fallacies, Elements of Sea Force, Naval Gunnery in all its aspects, some Root Doctrines, etc., before taking up in order such engagements as the war afforded. Four chapters are devoted to the battle of Jutland. There are sixteen cuts and diagrams of the Jutland battle.

✿ ✿ ✿

TRAVELING afoot along the roads of old Japan has been made the subject of a most interesting 300-page volume, entitled *Samurai Trails*, by Lucien Swift Kirtland. The walking company consists of two Americans and one Japanese, who, unwilling to follow the beaten track of tourists, devote their time to seeking by-ways that most foreigners do not even know the existence of. Perhaps the most interesting of the sixteen chapters is the tenth, dealing with an experience of the travelers in a mountain inn. There are a number of illustrations from photographs. Published by the George H. Doran Company, New York.

MARINE Gas Engines, their Construction and Management, by Carl H. Clark, S. B., is published in a second edition, revised and enlarged, by the D. Van Nostrand Company, New York. This is a practical, systematic treatment of the care, operation and construction of the standard types of engine, including the new development of Diesel and oil engines. The contents deal with types of engines, including the new development ignition devices, wiring, lubrication, reversing mechanism propellers, installation, etc. There is a chapter on how to select an engine and there are 102 illustrations.

✿ ✿ ✿

JACQUO The Rebel, by Eugene Le Roy is a story about the rural life of Perigord, France, between 1810 and 1830, which up to the time of the Great European War had hardly changed the customs or the atmosphere of its small peasant communities.

A study of sturdy personality standing up successfully against injustice, privilege and intrigue, in which the extraordinary kindness of the common people, their simplicity and devoutness reveal the gentle qualities which have made French civilization so valuable to the world.

This is unquestionably the most important of Le Roy's novels, and ranks with the best of de Maupassant.

Jacquo the Rebel is published by E. P. Dutton & Company, New York.

✿ ✿ ✿

THE British Navy at War, by W. Mac Neile Dixon and published by Houghton, Mifflin Company, Boston, is the real story of what the British Navy has done in the present war, including full and graphic descriptions of the Jutland Sea Fight and other engagements great and small, as well as an illuminating account of the submarine.

The author was given every facility for gathering this information, and his book is as authentic as it is thrilling.

The New Navigation

(Continued from page 154)

north, east, south and west respectively.

One objection to the use of the St. Hilaire method is the plotting on the charts of the ship. There are three ways of avoiding this. First, the large plotting charts of the Hydrographic Office, second, Whitmark's Plotting Pad, and third, the use of pads of squared paper, ten lines to the inch each way, which are to be had from houses dealing in surveyors' supplies, and are known as Cross-Section Blocks. These are 7 x 10 inches, 24 sheets in each pad, larger single sheets of about 16 x 20, and also in long rolls. A pencil of about HHH hardness may be used with these. The cross lines may be deemed to be parallels of latitude, one minute of arc apart and consequently the scale will be one mile to 1/10 of an inch. The vertical lines will mark the miles east and west and consequently departure, and the sheet may be deemed a Mercator Chart. Difference longitude when needed may be obtained by reference to traverse tables, or by laying off diagonally in a corner of the pad the length in miles of a degree of longitude at the latitude of the problem. This can be done so that the lines of paper will divide the degree into two minute intervals, or the middle latitude between 1st D R position and the Fix may be taken as an angle with its vortex as the Fix, its base the latitude of the Fix and the D R meridian as the side opposite in a triangle. The side opposite right angle in the triangle so constructed will be in length as many miles of the scale as there are minutes of difference longitude between the D R position and the fix.

The departure need not be measured (see Muir p. 239). This method of obtaining diff. long. is shown in Fig. 11. It will be noted that this triangle could have been equally well constructed below the latitude of the fix with B as one of its points, thus making the plotting more compact.

The horizontal lines of the cross section paper are deemed to measure minutes (or miles) of latitude. The perpendicular lines mark miles only east or west and are *not* used as longitude. They are also convenient in laying off meridians and angles.

Notwithstanding the equal spacing of the latitudes the essential idea of the Mercator chart is preserved. This results from making the value of the longitude in miles depend upon the middle latitude of the problem. That is diff. long. equals secant of lat. multiplied by departure in miles.

Of course it is obvious that no Mercator chart could be drawn on the basis of equal spaces of the latitudes. The difference between using H. C. mercator plotting sheets and the cross section or plain paper is that with the first one depends upon mid. lat. to obtain a scale of miles and the others he uses mid. lat. to convert departure into diff. long. One method is as accurate as the other. This may be demonstrated by working a few sights in both ways.

The mid. lat. of the problem with cross section paper is the difference of latitude between the first D R position and the Fix. If desired the correction provided on p. 77 of Bowditch (1918) may be used if the mid. lat. is less than 40°.

A preliminary rough sketch of the problem will assist in properly locating on the sheets, and a six inch scale divided into tenths of an inch with a 4 or 4½ inch german silver protractor and a nine inch parallel ruler will complete the outfit.

Even plain unruled paper can be used for plotting and while in some respects it is not so convenient as the squared paper, it permits the selection of any scale of miles which may be desired. The departure in miles will have to be turned into difference longitude by the use of the traverse table, but this is the work of a moment and only has to be performed once or twice in each plotting.

It will also simplify the plotting if the navy practice is followed of counting degrees from North by East all the way round the compass and thus to set down e. g. 260° instead of S 80° W or N 100° W as in Figures 5–8. Also at the time of observation an approximate bearing of the star should be noted.

Angles are not distorted on a Mercator chart and are correctly plotted at their full value.

For slow moving ships F. C. Cross in his "New Navigation" has suggested that when the interval between successive observations of the sun is about two hours and the run between sights does not exceed twenty miles, it will usually be satisfactory to assume for both problems the first D R position. This saves a little in computation and again illustrates the freedom with which one may pick out to suit his convenience a point from which to work out the Sumner Line at the moment of observation. This procedure might not, however, be satisfactory early in the morning with an easterly run of the ship, or late in the afternoon with a westerly run. For runs from twenty to forty miles between sights he suggests that the problem be

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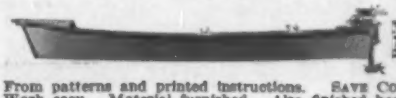

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DU PONT

(*Continued from page 163*)

worked from the point midway of the run for both sights.

In the Navy and for those who wish to work out in advance the problem of the second observation, when the course and speed of the ship for the selected interval of time can be determined in advance, the first sight is worked out, the prospective run is plotted from the computed point and for the determined time, about two hours later, the calculated altitude and bearing of the sun at that time is determined. There remains therefore at the time of observation only to note the difference between the calculated and the observed altitude and to plot the Sumner Line. If the sight is taken some seconds earlier or later than the time arranged for, it is only necessary to turn these seconds of time into minutes of arc and to move the terminal point of the run the corresponding two or three minutes of longitude east or west, as the case may be, turning these minutes into miles by means of the traverse table or otherwise. The error thus introduced is due to the small change of position of the ship in the few seconds of time allowed for and would be negligible even with a fast moving vessel.

It should be apparent from the foregoing that from the time in the morning when the sun has a sufficient altitude for satisfactory observation to the corresponding time in the afternoon it is possible to obtain a satisfactory fix by allowing a two hour interval with no variation in the problem involved except when a meridian or ex-meridian altitude somewhat simplifies the procedure.

In the early morning and late afternoon with the aid of an observation of the moon and of the sun, a fix may sometimes be obtained without a run between sights and this is also true for observations of stars at twilight and on moonlight nights, or whenever the horizon is sufficiently well defined.

* * *

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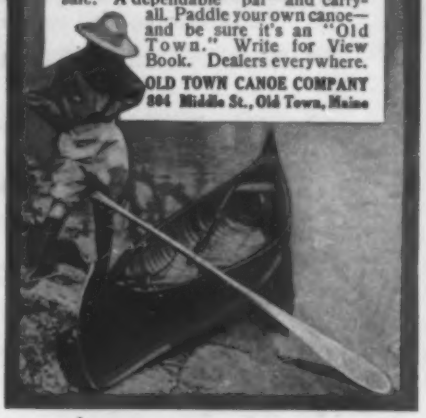

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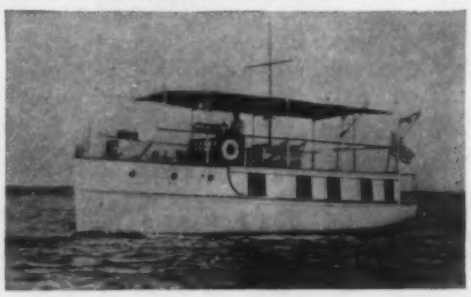

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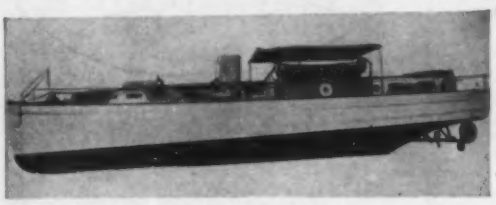

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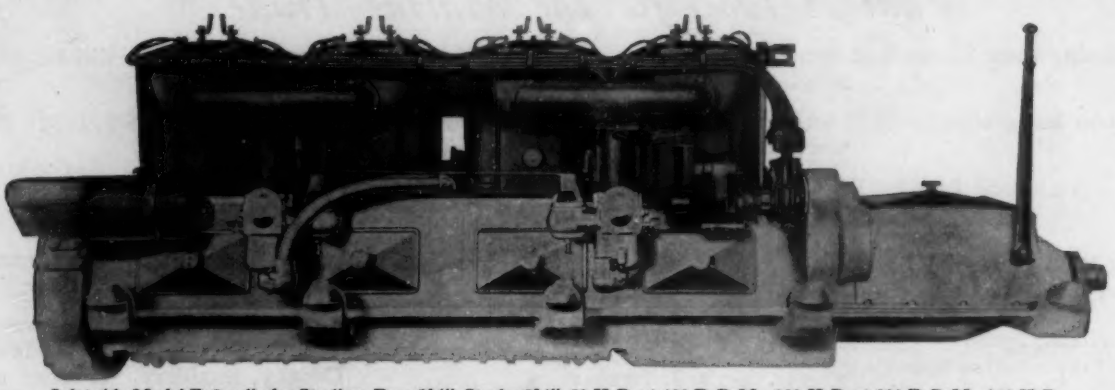

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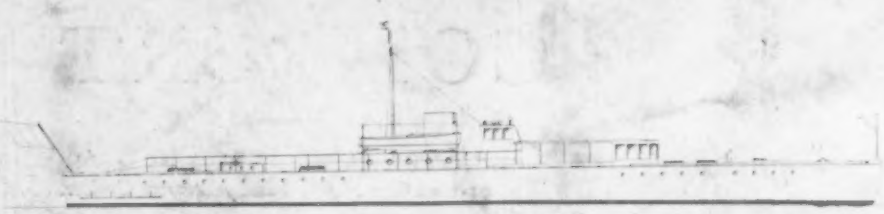

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